FORESTRY ABSTRACTS

VOLUME XII. 1950-51

INDEXES

		PAGE
1.	AUTHORS - - - - - - - -	2
2.	SPECIES - - - - - - - -	18
3.	SUBJECT - - - - - - - -	27
4.	GEOGRAPHICAL - - - - - - -	37

The reference number refers to the serial number of the abstract, which is given at the *head* of the title.

Reference numbers with "p." prefixed refer to page numbers.

Numbers in **bold type** in the Species, Subject, and Geographical Indexes refer to matter in Section 3 and therefore furnish an index to the separate issue of *Forest Products and Utilization.*

AUTHORS INDEX

AALTONEN, V. T. 1725, 2605, 2626
Abadie, F. *see* Chambard, P.
Acosta Solís, M. 229, 240, 1519
Adali, F. 237
Adams, J. S. 2883
Adams, L. 744
— *see* Squillace, A. E.
Adams, R., and Whaley, W. M. 1479
Addoms, R. M. 975
Agather, A. J. *see* Holiman, R.
Aggarwala, J. C. 382
Agostini, R. 2462
Agra, Y. 2310
Aguilar, L. 2028
Ahmad, S. 1721
Ahola, V. K. 3349
Aichele, H. 2417
Aikman, J. M. 1991
—, and Cooper, G. R. 1938
—, and Gilly, C. L., 2761
Airan, J. W. *see* Nadkarni, M. D.
Airy Shaw, H. K. 1018, 1024
Akimochkin, N. G. 2899
Akkeren, J. J. van *see* Hornibrook, A. E. M.
Ålander, P., and Fogelberg, B. C. 1342
Alarcón, F. 1081
Albanesi, H. 230
Al'bitskaya, M. A., and Bel'gard, A.L. 2318
Aldous, S. E. 2545
Alexander, J. B. 1169, 3013
Alexander, J. L. *see* Fraser, A. R.
Alfredsson, B. *see* Enkvist, T.
Alinari, E. 1410
Allard, H. A. 2788
Allegri, E. 1886, 2711
—, and Morandini, R. 118
Allen, E. K. *see* Harris, J. O.
Allen H. T. 1930
Allen, J. C. 2923
Allen, J. W. 2624
Allen, O. N. *see* Harris, J. O.
Allen, R. M. 2903
Alliot, H., and Ivanès, P. 1224
Allison, P. A. 3566
Allouard, P. 2306, 2601
Almeida, C. R. Marques de 1113
Almeida, J. L. Ferreira de 116, 122
Alvarez-Nóvoa, J. C., Erdtman, H., and Lindstedt, G. 3039, 3040
Ambrož, J. 155
Amey, G. 3094
Amidon, G. B. 2594
Anchel, M. 945, 3287
Anderson, A. B. 1209
—, and Hermann, A. 595
Anderson, E. A. 2990
Anderson, I. V. 3213
Anderson, J. P. 1793
Anderson, M. L. 2527
Anderson, R. H. 151
Andersson, E., and Strand, L. 2687
Andrade, D. X de 279
Andreas, C. H. 1820
Andrews, F. W. 1791
Anet, F. A. L., Hughes, G. K., and Ritchie, E. 2227, 3276
Anić, M. 1757, 1948
Anker-Rasch, O. 3088
Anto 1770
Antoine, F. *see* Couturier, A.
Antonaccio, P. A. 2927
Antoniotti, G. B. 1626, 2477
Anzilotti, F. 1014
Appling, J. W. *see* Heuser, E.
Aran, S. 1099
Arbogast, C. Jr. 1582, 2460
—, and Heinselmann, M. L. 741
Ardenne, M. 2510
Ardikoesoema, R. I., and Linden, P. J. van der 2255
Ardizio, P. *see* Naves, Y.-R.
Arend, A. G. 446, 3251
Arend, J. L., and Collins, R. F. 841
—, and Julander, O. 2529
—, and Monroe, A. F. 1978
Aries, R. S. 1317
Armbruster, E. 1276
Armenise, V. 130
Armstrong, F. H. 1421
Armstrong, J. B. 3140
Armstrong, W. D., and Brison, F. R. 1759
Arnkil, J. E. *see* Putkisto, K.
Arnold, G. *see* McDonough, E. S.
Aro, P. 413, 856
Aronica, I. 799
Artschwager, E. 1153
Ashley, R. H. 1823
—, *see* Bramble, W. C.
Asplund, A. 541
Aston, B. C. 2724
Atchison, E. 2696
Atkins, E. S. 21
—, and Farrar, J. L. 251
Atwater, M. M., and Koziol, F. C. 2604
Aubréville, A. 174, 1695, 1792
Auerbach S. *see* Park, O.
Aughanbaugh, J. E. 225, 965
Aulin-Erdtman, G. 378
Ayer, G. R. 941
Aziz, M. A. *see* Ranganathan, S. K.
—, and Sitaraman, N. L. 206
Azqueta y Goitia, J. M. 1056

B., A. 3342
Bade, O. M., and Holte, T. 537
Badger, G. M., Cook, J. W., and Ongley, P. A. 946
Badhwar, R. L. *see* Krishna, S.
Badoux, E. 2850
Baechler, R. H. 1371
Bagchee, K. 1374, 1567
—, and Bakshi, B. K. 1568
Bailey, F. L. 1123
— *see* Snow, E. A.
Bailey, I. W. *see* Money, L. L.
Bailey, R. A. 1871, 2368
Baird, P. K. 1348
Baisinger, D. H. *see* Lindsay, R. C.
Baker, F. S. 2820
Baker, P. S. *see* Browning, B. L.
Baker, W. J. *see* Panshin, A. J.
Baker, W. L. 2431
— *see* Crandall, B. S.
Bakker, H. C. 1982
Bakshi, B. K. 1863
— *see* Bagchee, K.
Balachowsky, A. 210
Balch, R. E. 1865
—, and Underwood, G. R. 1604
— *see* Barter, G. W.
Baldwin, J. T., Jr., and Speese, B. M. 2697
Baldwin, W. F., and Coppel, H. C. 213
Bale, A. P. 2067
Ball, C. R. 201
Ball, E. 131
Baltz, E. 522
Banerjee, B. K. *see* Sen, J.
Bannan, M. W. 1151
—, and Whalley, B. E. 1152
Banti, G. 998
Barnard, R. C. 1050, 1057, 1114, 1561, 1924, 1925, 1944, 3360
Barnes, H. F. 774, 3444, 3445
Barnes, J. A. 3142
Barraclough, S., and Rettie, J. C. 888
Barter, G. W., and Balch, R. E. 1621
—, and Brown, W. J. 207
Barton, A. J., Brown, L. R., Kimball, M. H., Miller, P. A., Roewekamp, F. W., and Wilcomb, H. 2463
Bartsch, J., and Bartsch, M. 1799
Basbous, M. 2686
Batista, A. Chaves 719
Batko, S. 1827
Baudendistel, M. E. 85
Bauer, S. 845
Baumgartner, A. 2602
Beadle, N. C. W. 177, 2731
Beall, H. W. 1545
—, and Lowe, C. J. 680
Bean, W. J. 182
Beard, J. 261
Beaver, S. H. 1951
Becker, G. 563, 1379, 1381, 1858, 2058, 2183, 3200
Becker, H. 1851
Becker, M. E. 1624
Becking, J. H. 263, 2935, 3485
Beckman, C. H., and Kuntz, J. E. 3388
Bedard, W. D. 2413
Bednall, B. H. 2520
Beecher, H. W. 1247
Beekman, H. A. J. M. 220
Beer, R. E. *see* Pritchard, A. E.
Beijerinck, W., and Pelkwijk, A. J. ter 2621
Bel'gard, A. L. *see* Al'bitskaya, M. A.
Bell, A., and Wright, G. F. 1183
Bell, E. R., and Krueger, N. T. 370
Bell, L. *see* McDonough, E. S.
Bellouard, P. 1040
Bellucci, V. 1906
Belsey, S. 3272
Beltram, V. 2896, 2912, 2919
Belyea, R. M. 211
— *see* Wellington, W. G.
Bendegom, L. van *see* Burgt, J. H. van der
Bender, F. 2154
— *see* King, F. W.
Bene, J. 2115

Benić, R. 599, 3233
Benett, W. D. 280, 281
Benson, C. A 2103
Benson, L. R. 3524
Benson, R. B. 2434
Benson, R. W. 1630, 2824
Berg, L. S. 2738
Bergek, T. *see* Björkman, E.
Berger, C. A., and Witkus, E. R. 971
Berger, G. *see* Perret, J.-E.
Bergeron, J. R., and Perreault, H. C. 1230
Bergman, S. I. 361
Bergold, G. H. 1853
Berkel, A. 2977
Berkey, W. E., and Newhouse, P. D. 1294
Berthoud, R. P. 1357
Bertsch, K. 1693
Besarić, R. *see* Rikovski, I. I.
Beuschlein, W. L. 1416
Beylin, I. G. 707
Bhargava, O. P. 302
Bharucha, F. R. *see* Navalkar, B. S.
Bhasin, G. D. *see* Roonwal, M. L.
Bhatia, B. M. *see* Chatterjee, N. C.
Bhattacharji, S., Mitra, C., and Siddiqui, S. 637, 638
Bhattacharya, A., Chatterjee, A., and Bose, P. K. 943
Bickford, C. A. *see* Camp, H. W., Jr.
Biliotti, E. 3435
Billig, K. 594
Billings, W. D. *see* Oosting, H. J.
Billington, P. S. *see* Hammond, R. N.
Biraghi, A. 723, 724, 725, 727, 1576
—, and Pavari, A. 2350
Birchfield, W., and Weber, G. F. 3409
Bird, E. L., and Docking, S. J. 1207
Bird, F. T. 2436
Bisset, I. J. W. 391, 2013
—, and Dadswell, H. E. 1157, 2989
Bist, B. S. *see* Narayanamurti, D.
Björkman, E., Samuelson, O., Ringström, E., Bergek, T., and Malm, E. 519
Black, G. A., Dobzhansky, T., and Pavan, C. 2633
Black, W. F. *see* LeJeune, R. R.
Blake, O. J. *see* Stern, E. G.
Bland, D. E. 1176
Blew, J. O. 1391, 1392
—, and Olson, W. Z. 1386
Blink, G. C. v. d. 435
Blockhuis, J. L. W. 2629, 2928
Bloomberg, W. J. 1001
Blum, G. *see* Ursprung, A.
Blumenstein, R. 1349, 3254
Blunck, H. 2289
Bodenheimer, S. 2379
Boe, K. N. *see* Roe, A. L.
Bogdanov, P. L. 1769
Boggess, W. R. 326, 822
—, and Lorenz, R. W. 311, 2491
Bogorad, L. 948
Boller, K. H. *see* Norris, C. B.
Bolton, Lord 1873
Bomhard, M. L. 2804
Bond, G. W. 2966
Bonino, G. B., Ciferri, R., and Morselli, G. 2178
Bonner, E. 1910
Bonner, J. 693
Booker, C. A. 2212
Boomsma, C. D. 1734
Booth, F. L. 603, 605, 607, 1296
Booth, K. G. *see* Holzer, W. F.
Bordères-Rey, O., and Gaussen, H. 183, 1011
Borghini, G. L. 1878
Borusiewicz, A., and Kapuscinski, S. 3308
Bos, H. M. 3416
Bosch, E. 2706
Bose, P. K. *see* Bhattacharya, A.
Bosly, J. 643
Bosq, J. M. 2396
Boudy, P. 1874
Boulton, E. H. B. 3197
Bourgenot 2586
Bousquet, V. W. 2076
Boutique, R., and Troupin, G. 2803
Bouvarel, P. 988, 1560
Bowser, D. C. 3517
Boyce, J. S. Jr. 3372, 3404
Boyd, H. 1661
Boyd, J. D. 2677, 2678
Boyd, L. L., Dale, A. C., and Giese, H. 1536
Boyd, R. J. 2215
Boyko, H. 160, 161
Boyle, A. A. 1551
Bradley, G. A. 1036
Braithwaite, J. D., and Manning, D. E. B. 517
Bramble, W. C., and Ashley, R. H. 298
Brandts, T. G. 1286, 1321, 2132
Brantseg, A. 2630
Brasnett, N. V. 843, 2578, 3529
Braun-Blanquet, J. 2743
Brauns, A. 778
Bray, J. M. 611
Bredikhina, L. N. *see* Nikitin, P. D.
Breistroffer, M. *see* Offner, J.
Breny, R. 3428
—, and Detroux, L. 3454
Brett, I. *see* Hummel, F. C.
Bretz, T. W., and Henry, B. W. 3391
—, and Long, W. G. 3386
—, and Swingle, R. U. 1758, 2365
Breuning, S. 1857
Brian, P. W., Curtis, P. J., and Jefferys, E. G. 2611
—, Wright, J. M., Stubs, J., and Way, A. M. 2610
Briegleb, P. A. 813
Briggs, D. R. *see* Siminovitch, D.
Briggs, L. H., Cawley, R. W., Loe, J. A., and Taylor, W. I. 655
—, and Locker, R. H. 1473
—, and Loe, J. A. 656
Brighten, C. W., 2828
Brimble, J. A. 1704
Brinkman, K. A., and Krajicek, J. E. 2511
Brison, F. R. *see* Armstrong, W. D.
Broadfoot, W. M. 2623
Brockman, C. F. 2584
Brockman, J. A. *see* Koepeli, J. B.
Bromley, S. W. 773, 2424
Bromley, W. S. 421, 3080
Brown, C. E. 2392
Brown, D. L. 1430
Brown, G. S. 2867, 3090
Brown, J. G. 2331
Brown, J. M. B. 984
Brown, K. J. and McGovern, J. N. 1320
— *see* McGovern, J. N.
Brown, L. R. *see* Barton, A. J.
Brown, N. C. 2069, 3107
Brown, R. D., Drummond, L. J., Lahey, F. N., and Thomas, W. C. 2237
Brown, R. T. 1815
Brown, W. J. *see* Barter, G. W.
Browne, F. G. 1222, 2187
— *see* Thomas, A. V.
Browning, B. L., and Baker, P. S. 1329
— *see* Lewis, H. F.
Bruce, D. 1072, 1311, 2859
— *see* McArdle, R. E.
Bruce, M. B. 686
Brunson, F. D. *see* Moessner, K. E.
Bryant, B. S. 3481
Bryant, L. H. 2150, 3118, 3269
—, Humphreys, R. F., and Martin, P. J. 545
—, and Martin, P. J. 2231
Buchanan, T. S. 787
Buchholz, E. 319, 913, 1700, 2926
Buchholz, J. T. *see* Gray, N. E.
Buchwald, N. F. *see* Thomsen, M.
Buckland, D. C., Foster, R. E., and Nordin, V. J. 711
Buell, M. F. 102
—, and Cantlon, J. E. 2758
— *see* Stern, W. L.
Bugbee, R. E., and Riegel, A. 2366
Bugnicourt, F. 704
Bulard, C. 133, 1012, 1013, 1933, 2892
Buli, U. 2502
Bull, H. 2940, 3506
Bullard, W. E. 2644
Bump, G. 740, 2818
Burbridge, D., and LeJeune, R. R. 214
Burger, F. W. 2905
Burger, H. 3503, 3504
Burgers, T. F. 1884
Burgess, E. D. 2443
Burgham, J. N. *see* Hearmon, R. F. S.
Burgt, J. H. van der, and Bendegom, L. van 77
Burgy, M. P. *see* McLaren, C. G.
Burke, J. P. 2311
Burkle, J. L. 2496
Burney, H. W. *see* Ryberg, M. E.
Bushey, D. J. 2915
Bussell, K. R. *see* Rischbieth, J. R.
Butler, C. G. 3257
Butler, R. T. 2546
Byram, G. M., and Doolittle, W. T. 812

CAFLEY, J. D. *see* Nordin, V. J.
Cajander, A. K. 2729
Callin, G. 2876, 2936, 3536
Calvo de la Torre, J. *see* Marques Mesa, A.
Camefort, H. 1779
Cameron, J. M. 1852
Camp, H. W. Jr., and Bickford, C. A. 791
Campbell, E. 3557
Campbell, G. A. *see* West, T. F.
Campbell, R. A., Price, H. R., and Morin, R. A. 3491
Campbell, R. S., and Peevy, F. A. 2944
Campbell, W. A. 3410
—, Miller J. H., and Thompson, G. E. 2057

Campo-Duplan, M. van 978, 979, 980, 981, 982, 2708
—, and Gaussen, H. 959
Campredon, M. J. 1996
Camus, A. 1839
Canright, J. E. 136
Cantiani, M. 2470
Cantlon, J. E. *see* Buell, M. F.
Capo, A. *see* Holingren, H.
— *see* Pattetta, J. J.
Cappuccini, G. 1103
Cardinell, H. A., and Hayne, D. W. 2370
Carlson, M. C. 2702
Carnevale, J. A. 232, 286
Caroselli, N. E. 738
—, and Feldman, A. W. 3393-5
— *see* Feldman, A. W.
Carpenter, I. W., and Guard, A. T. 2684
Carpenter, R. D. 485, 2149, 3117, 3166
— *see* Lockard, C. R.
Carrera, C. J. M. 2339
Carter, J. C. 1578
Cash, E. K. *see* Waterman, A. M.
Castagne, E. 379
Castellani, E., and Graniti, A. 3399
Cawley, R. W. *see* Briggs, L. H.
Centola, G. 554
Černjavski, P. 1694, 2746, 2789
Chadwick, L. C. 1753, 1754
—, and Nank, E. E. 2294
Chaiken, L. E. 694
Chakravarti, K. K., Dhar, D. C., and Siddiqui, S. 3268
Chalk, L. 2967
— *see* Metcalfe, C. R.
Challot, J.-P. 81
Chambard, P., and Abadie, F. 1468
Chamberlain, G. 3195
Chamberland, H. J. 493
Chambers, V. H. 781
Champion, H. G. 39, 689, 2682
Chandrasekharan, S. N., Parthasarathy, S. V., and Sundararaj, D. D. 949
Chang, P. L. *see* Li, C. S.
Chaney, R. W. 142, 911
Chapman, G. *see* Olson, A. R.
Chapman, G. W. 41
Chapman, H. H. 2512, 3511
Chapman, V. J., 76
—, and Ronaldson 2642
Chapman, V. T. *see* Miriams, R. V.
Chard, R. 2066
Chardin, A. 1299
Chase, W. W. 739
Chastaignet, J. 2044
Chattaway, M. M. 363
Chatterjee, A. *see* Bhattacharya, A.
Chatterjee, D., and Raizada, M. B. 1021
Chatterjee, N. C., Bhatia, B. M., and Chatterjee, P. N. 1382
— *see* Pant, G. D.
— *see* Rehman, M. A.
Chatterjee, P. N. *see* Chatterjee, N. C.
Chatterjee, R., and Guha, M. P. 1480, 1481, 3279
Chatterji, R. N., and Raizada, M. B. 1830
Chaturvedi, M. D. 2599
Chaudry, G. R., and Siddiqui, S. 2043
Cheljadinova (Chelyadinova), A. I. 1780
Cheo, S.-Y. *see* Reeder, J. R.
Cheo, Y. C., and Cranch, R. C. 3064
Chester, K. S. *see* Fuller, R. G.
Cheu, S. P. *see* Lew, T. W.
Chevalier, A. 200, 639, 990, 1478, 2649, 2794, 3273
Chevedaev, A. K. 2998
Chidester, G. H. 527
Childe, V. G. 2579
Chimma, A. S. *see* Narayanamurti, D.
Chisholm, T. H., and Suggitt, J. W. 567
Chochieva, M. M. *see* Nikitin, N. I.
Chothia, H. P. 1569
Chowdhury, K. A., and Ghosh, S. S. 2014
—, and Tandan, K. N. 243
Christensen, C. M. *see* French, D. W.
Christerson, T. 824
Christian, M. B. 470
Christie, J. M. 2508
Chrystal, R. N. 780
Chu, K., and Cooper, W. S. 143
Chudakov, M. I. 1182
Chudnoff, M., and Wangaard, F. F. 3130
Church, J. W. *see* McIntosh, W. G.
Ciccarone, A. 714
Ciferri, R. *see* Bonino, G. B.
Clapp, W. F. *et al.* 562
Clark, G. L. 1331
Clark, J. 1603
Clark, L. R. 2813
Clarke, I. D., Rogers, J. S., Sievers, A. F., and Hopp, H. 1470
Clausen, V. H., Rees, L. W., and Kaufert, F. H. 1399
Clauser, F. 2471
Clawson, M. 891
Cleary, V. P. *see* Westcott, J. C.
Clements, F. E. 1796
—, Martin, E. V., and Long, F. L. 112
Clements, R. W. 3295
—, and Collins, D. N. 1495
Clements, V. A. *see* Munns, E. N.
Cline, M. G. *see* McCaleb, S. B.
Clowes, F. A. L. 2701
Coaton, W. G. H. 215, 1383
Cobb, B. C. *see* Darwin, W. N.
Cockrell, R. A. 1165
Coetzee, W. H. K., Hugo, J. F. du T., and Pratt, F. F. 3312
Cohen, W. E. 381, 385, 442, 520
— *see* Foster, D. H.
Coincy, De 1064
Čokl, M. 2245, 2246, 3294
Coldwell, T., and Pechanec, J. F. 2878
Collier, R. D. 441, 2096
Collier, W. A., and Pijl, L. van der 2241
Collins, D. N. 1493
— *see* Clements, R. W.
Collins, R. F. *see* Arend, J. L.
Collins, W. B. 880
Collins, W. F., and Wild, H. 1522
Colwell, R. N. 837
Colwell, S. J. *see* Turnbull, R. F.
Connelly, H. H. 2214
Constantine, A. K. *see* Hiley, W. E.
Conway, M. J. 1583, 1590
Cook, D. B. 2824
Cook, J. W. *see* Badger, G. M.
Cooney, E. A. 1122
Cooper, G. R. *see* Aikman, J. M.
Cooper, W. S. *see* Chu, K.
Cope, J. A. 1657
Coppel, H. C. *see* Baldwin, W. F.
Core, E. L. 1814
Corey, W. S., Watt, A. B., and Watt, R. B. 1316
Corley, G. *see* Park, O.
Cormio, R. 404
Cornman, J. F. 184
Cosens, R. D., and Tackle, D. 2372
Côté, J. 3100
Cotterell, Sir R. 2826
Coudreau, J. 3245
Coulter, J. K. 2635
Courillot, E.-P. 838
Cousins, F. W. 3147
Couturier, A., and Antoine, F. 755
Cowan, I. McT., Hoar, W. S., and Hatter, J. 1869
Cozzo, D. 1147, 1155, 2978, 2982
Craig, D. *see* Elgee, H.
Craig, H., and Evans, H. 700
Craighead, F. C. 748
Cramer, H. H. 3466
Crandall, B. S. 2345
—, and Baker, W. L. 722
Cravioto, R. O. *see* Marques Mesa, A.
Crawford, F. S., and Wirka, R. M. 585
Creamer, G. B. 518
Creighton, J. W., and Dexter, S. T. 3232
Crestin, F. 1240
Crews, A. G. 2199
Crivellari, D. 760, 1784, 1955, 3298
Crocker, R. L., and Wood, J. G. 2585
Croker, T. C., Jr. 224
Cromer, D. A. N., 684
Crosby, D. 2395
Crossley, D. I. 313
Crowther, E. M. 1091
Cruikshank, J. W. 2157
Cruzado, H. J. *see* Loustalot, A. J.
Cuatrecasas, J. 1025, 1831
Cuming, F. G. *see* Hawboldt, L. S.
Cumming, M. E. P. 3449
Cummins, G. B., and Ling, L. 3397
Cunningham, J. B. 475, 1295
Cunningham, R. N. *et al.* 2593
Curtis, J. D. 788
Curtis, J. T. *see* McIntosh, R. P.
Curtis, P. J. *see* Brian, P. W.
Cutten, E. Y. 1628
Cvek, S. 1968
Czepek, E. 2198, 3225
Czereyski, K. 3075
Czuraj, M. 1641

DABRAL, M. L. *see* Narayanamurti, D.
Dabral, S. N. 954, 1755, 1932
Dacanay, P. 2554
Dadswell, H. E. *see* Bisset, I. J. W.
— *see* Ingle, H. D.
— *see* Wardrop, A. B.
Dağci, A. N. 2414
Daglish, C. 3283, 3284, 3285
Dahms, W. G. 3357, 3359
Dale, A. C. *see* Boyd, L. L.
Dale, I. R. 262
Dale, J. D. 551

Daly, E. G. 1976
Dampf, A. 671
Danfel'd, P. 3309
Danielson, C. W. *see* Toole, A. W.
Dansereau, P. 140, 1670, 2712
Darrow, R. A. *see* Young, V. A.
Darwin, W. N., and Cobb, B. C. 3177
Das, B. M., 1471
Das, N. R. *see* Narayanamurti, D.
Daubenmire, R. F. 2693
Davenport, J. B., Jones, T. G. H., and Sutherland, M. D. 1502
Daviault, L. 2440
David, R. 2325, 2889
David, W. A. L., and Gardiner, B. O. C. 750
Davidson, R. W. 1573, 2349
— *see* Diller, J. D.
— *see* Hartley, C.
— *see* Wester, H. V.
Davies, F. H. 2425
Davis, E. A. 324, 2292
Davis, E. M. 1273, 3127
Davis, P. C. 559
Davis, W. C. *see* Tullis, E. C.
Davis, W. S. 3355
Davol, F. D. *see* Kellogg, C. E.
Day, G. M., and Robbins, W. R. 1895
Day, M. W. 1558
— *see* Dils, R. E.
Day, W. C. *see* Gottlieb, S.
—, Pelczar, M. J., Jr., and Gottlieb, S. 1199
Day, W. R. 677, 2290, 2459, 3343, 3344, 3345, 3376, 3377
Dayton, W. A. 2558
DeBoer, S. G. 2374
Decker, G. C. *see* Gunderson, H.
Deitschmann, G. H. 1961, 1962
Delavault, R. E. *see* Warren, H. V.
Delevoy, G. 1106
Delgado, R. F. 108
— *see* Loustalot, A. J.
— *see* Plank, H. K.
Delong, D. M., and Ross, H. H. 2429
Deman, L. 1368
Demann, W., and Herzig, J. 2191
Dement'ev, P. I. 2909
Demme 2406
DeMoisy, R. G. 2082, 3082, 3089
Deogun, P. N. 1475
Deong, E. R., Peer, K. C., and Fancher, L. W. 2384
Déribéré, 2204, 3230
Desch, H. E. 1221, 2979, 3551
Detroux, L *see* Breny, R.
Detti, E. 3550
Devine, J. 1509
Dexter, S. T. *see* Creighton, J. W.
Dhar, D. C. *see* Chakravarti, K. K.
Dickinson, F. E. 3221
— *see* Hess, R. W.
— *see* Smith, E. M.
Dietz, A. G. H. 1172
Dijkman, M. J. 952, 2650
Diller, J. D., and Davidson, R. W. 3382
Dils, R. E., and Day, M. W. 3461
—, and Robbins, P. W. 814
Dimbleby, G. W. 2636
Dineur, P. 2866
Dirks-Edmunds, J. C. 2815
Dixon, L. B. 225
Dobzhansky, T. *see* Black, G. A.
Docking, S. J. *see* Bird, E. L.
Dodge, C., and Smyth, H. A. 1246
Doering, H. 521
Dohr, A. W. 3011
Doidge, E. M. 2768
Dokuchaev, V. M. 1988
Dolivo, A. 1781.
Dollear, F. G. *see* Hussain, S. A.
— *see* Smith, B.A.
Dominguez, H. H. 33
Dönhoff, C. Graf 2542
Doolittle, W. T. *see* Byram, G. M.
— *see* Wahlenberg, W. G.
Doriguzzi, G. 1956
Dorman, K. W., and Sims, I. H. 2
Dosker, C. D. 487, 1266
Dosmond, M. P. 609
Dosoudil, A. 2036
— *see* Kollman, F.
Douglas, A. 2770
Douglas, I. B. 3022
Douglas, W. 496
Dowdy, W. W. 2816
Dowson, W. J. 2335
Drees, E. M. 899
Drift, J. van der 2620
Driver, C. H. 2615
Drummond, L. J. *see* Brown, R. D.
Drummond, S. 2111
Duchaufour, P. 72, 1730, 1735, 2637
Ducke, A. 1789
Dudić, M. M. *see* Radosavljević, S. D.
Duerr, W. A. *see* Guttenberg, S.
— *see* Sternitzke, H. S.
Duff, C. H. 2075
Duffield, J. W. *see* Stone, E. C.
Dugelay, A. 78, 3356
Duncan, C. G., and Richards, C. A. 1373
Duncan, W. H. 1785
Dunsmore, F. L. 489, 1304, 1309
Dupré Ceniceros, E. 45
Duterme, J. 2394
Dutie, D. W. 1737
Dutt, S. *see* Parihar, D. B.
Duvigneaud, P. 165, 166, 197, 642, 2752
Dwyer, J. D. 2795

E., J. D. D., and H., C. H. R., 1654
Eades, H. W., and Roff, J. W. 1376
Eastwood, D. J., Fraser, G. K., and Webley, D. M. 930
Eaton, V. *see* Juhren, G.
Ebel, M. 284
Ebes, K. 2689
Echeverria, I., and Pedro, S. de 3179
Eckstein, K., and Schwerdtfeger, F. 3462
Edén, J., and Rennerfelt, E. 3201
Edlin, H. L. 1663, 2065
Edmonds, D. H. 1262
Edwards, J. P. 623, 1669
Edwards, M. V. 2748
—, and Holmes, G. D. 1092
Eeckhout, L., and Holder, J. van 2181
Egler, F. E. 150
Ehrlich, J. *see* Southam, C. M.
Eidmann, F. E. 2660, 2661
Eisenmenger, W. S. 926
— *see* Hinkle, D. A.
Eklund, B. 3501
Elgee, H., Craig, D., and Russell, J. K. 506
Eliason, E. J. 2824
Ellis, C. 2176
Ellwood, E. L. 3139
Elmendorf, A. 542, 3188
Elton, E. T. G. 1588, 3424
—, and Voûte, A. D. 3425
Engel, B. G., and Tondeur, R. 3277
Englerth, G. H. 1289
Engstrom, A. 290
Enkvist, T., and Hägglund, E. 504
—, and Moilanen, M. 1184
—, Moilanen, M., and Alfredsson, B. 1185, 1186
Ennevaara, P. A. 3553
Enzensberger, W. 3155
Erdtman, H. 390
—, and Rennerfelt, E. 1190
— *see* Alvarez-Nóvoa, J. C.
Ergülec, K. 1712
Ericksen, W. S. *see* Norris, C. B.
Ervin, H. O. 1415
Esau, K. 129
Euler, H. von and Euler, J. von 91
—, Heller, L., and Högberg, K. G. 90
Evanko, A. B. 88
Evans, H. *see* Craig, N.
Evans, J. D. D. 1063
Everist, S. L. 2258
Evreinoff, V. A. 1022
Ewing, J., Hughes, G. K., and Ritchie, E. 3274
Eyre, F. H., and Zillgitt, W. M. 2531
Eyres, H. T. 329, 2210

Fabricius, L. 3495
Facey, V. 1052
Fancher, L. W. *see* Deong, E. R.
Farber, E. 553, 3194
Farrar, J. L. *see* Atkins, E. S.
Fauré-Fremiet, E., and Thaureaux, J. 3216
Faust, H. 675
Fehér, D. 50, 58
Fekete, Z. 842, 3480
Feldman, A. W., and Caroselli, N. E. 3393-5
—, Caroselli, N. E., and Howard, F. L. 736
Feldman, E. S., and Rosnick, L. M. 1248
Fensom, K. G. 335
Fenton, E. W. 152
Fenton, R. H. 2083
Ferber, A. E. 1990
Fergus, C. L. 3380, 3406
Ferguson, C. W., Jr. 3493
Ferguson, J. H. A. 3509, 3527
Fernald, M. L. 189
Fernandez-Prida., and Mendoza, G. 1432
Fernie, N. 597
Féron, M. 3427
Ferrara, G. 1611
Ferré, Y. de 127, 186
—, and Gaussen, H. 1047
— *see* Jaurès, R.
Ferrell, W. K. 53
Ferrer-Delgado, R. *see* Delgado, R. F.
Fevold, H. L. *see* Klose, A. A.
Fey, W. 1949
Feytaud, J. 576, 2411
Finch, A. C. 3218
Findlay, W. P. K. 427, 428, 1196, 2766, 3220
—, and Savory, J. G. 3049
Finn, R. F. *see* Tyron, H. H.

Finn, T. P. *see* King, L. J.
Finney, D. J. 3488
Finnis, J. M. 2895
Firbas, F. 24
Fischer, F. 113, 2690
Fisher, C. E. *see* Young, V. A.
Fisher, J. N. 1934
Fisher, W. S. 2810
Fišman, V. 861
Fitting, H. 132
Fixmer, F. N. 2877, 2939
Fleischer, H. O. 464, 1364
Flock, R. A. 2430
Floderus, B. 1846
Florenzano, G. 3407
Fluiter, H. J. de 3447
Fobes, E. W. 424, 436, 440, 1226, 1227, 1233, 1234, 1235, 1236, 1237, 3095
Fogelberg, B. C. *see* Ålander, P.
Foil, J. H. 310
Foiles, M. W. 314, 315
Folkers, K. *see* Rogers, E. F.
Fons, W. L. 2312
—, and McBride, R. S. 690
Fontana, E. 846
Forbes, R. S. *see* Reeks, W. A.
Fordham, J. H., Williams, E. J. C., and Lawson, D. I. 681
Ford Robertson, F. C. 74
Foster, A. S. 976
Foster, D. H., Schwerin, G., and Cohen, W. E. 3027
Foster, D. L. 67
Foster, J. W. 179
Foster, R. E. *see* Buckland, D. C.
Fourchy, P. 2603
Foury, P. 805
Fowells, H. A. 1923
Fowler, M. E. *see* Wester, H. V.
Fox, H. W. *see* Lorenz, R. W.
— *see* Walters, C. S.
Føyn, P. 1211
Francey, J. 1709
Frančišković, S. 3290
Francke-Grosmann, H. 3054
Franklin, J. N., and Goddard, H. O. 505
Fransen, J. J. 2393, 3429, 3452, 3453
Franz, J. 761
Fraselle, J. V. 3411
Fraser, A. R., and Alexander, J. L. 820
Fraser, G. K. *see* Eastwood, D. J.
Fraser, M. G. 209
Freas, A. D. 466, 622, 3148
Frederick, L., and Howard, F. L. 3392
Freedland, M. M. 1255
Freeman, T. W. 3564
Freese, F., Jr. 1116
French, D. W., and Christensen, C. M. 1579
Freudenberg, K. 1181
— *see* Stumpf, W.
Frey-Wyssling, A. 3063
Friedrich, A. G. 3374
Friendrich, C. A. 86
Friendrich, W. *see* Schlitter, E.
Friend, R. B. *see* Potts, S. F.
Fries, R. E. 2782
Friesner, R. C. 2499
Frison, E. 2004
Fritz, E. 275, 3014
Fritz, N. H. 1710
Frontera Marqués, B. 962
Fukada, E. 2035
Fukarek, P. 2715, 2716, 2717, 2719
Fukushima, B. *see* Uoda, H.
Fuller, R. G., Harston, C. B., and Chester, K. S. 1455
Fullerton, A. W. 2540
Furlani, 672, 767, 768
Furrer, E. 2742
Fyfe, A. J. 3300
Fytche, R. F. *see* Prebble, M. L.

GÄBLER, H. 1614, 2387, 2419, 2441, 2447, 2450, 2451
Gabrovšek, E. 2548
Gael', A. G. 1104
Gagnepain, F. 2778
Gaines, E. M. 1966
Gaiser, R. N. 840
Galinovsky, F., Goldberger, H., and Pöhm, M. 641
Galoux, A. 1571
— *see* Noirfalise, A.
Gambrell, F. L., and Strickland, L. F. 2402
Gannevat, F. 816
Ganssen, R. 1742
Garber, H. J., and Tiller, F. M. 2203
García-Piquera, C. 896
Gardiner, B. O. C. *see* David, W. A. L.
Gardner, J. A. F. *see* MacLean, H.
Gardner, R. C. B. 1671
Garman, E. H., and Orr-Ewing, A. L. 273
Garman, P. 2382
— *see* Potts, S. F.
Garrison, G. A., and Rummel, R. S. 3264
Garver, R. D., and Moessner, K. E. 1637
Gaskell, T. 1254
Gatheron, J.-M., and Lavoine, J. 683
Gaümann, E. 692, 3212, 3384
—, and Péter-Contesse, J. 3368
Gaussen, H. 34, 1048, 2524
— *see* Bordères-Rey, O.
— *see* Campo-Duplan, M. van
— *see* Ferré, Y. de
—, and Rouquette, A. 1517
Gavrilov, K. A. 931
Gebauer, M. 412
Geerling, L. C. 1919
Gekeler, M. *see* Kurth, E. F.
Gemperli, L. 757
George 79
George, J. *see* Narayanamurti, D.
Gerasimov, M. V. 819
Gerber, R. 749
Gersdorf, E. 756
Gessel, S. P. 3526
—, and Lloyd, W. J. 1638
Gestas, P.-L. 1434
Geurten, I. 2659
Gevorkiantz, S. R., and Guilkey, P. C. 2479
—, and Olsen, L. P. 2509
Géza, S. 2873
Ghosh, S. S. *see* Chowdhury, K. A.
Giacobbe, A. 2244
Giannuoli, S. 244, 2995
Gibbs, R. D. 2655
Gibson, W. R., and Pearson, G. E. H. 3154
Gier, L. J. 1778
Giese, H. *see* Boyd, L. L.
Gilbert, G. E. 1722
Gilden, R. O., and Roberts, J. 2275
Gill, C. B. 2532
Gill, P. J. *see* Hiley, W. E.
Gill, W. 2851
Gillet, A. 596, 2208
Gilly, C. L. *see* Aikman, J. M.
Gilmour, J. D. 2539, 2552
Gimenez Radix L. 1954
Gimingham, C. 2722
Gindel, Y. 1929
Giordano, G. 91, 1451, 2019
Gischig, L. C. *see* Greider, H. W.
Gividen, J. H. 1259
Glattfelder, C. F. 1124
Glendening, G. E., and Paulsen, H. A. 2329
Glenny, F. H. 1702
Gliddon, C. 3103
Glock, W. S. 3500
Goddard, H. O. *see* Franklin, J. N.
Godding, R. 239
Godman, R. M. *see* Taylor, R. F.
Godnev, E. D. 1898
— *see* Zhukov, A. B.
Godske, C. L., Marstrander, J. H., and Schieldrup Paulsen, H. 3494
Goidànich, G. 536
Goldberger, H. *see* Galinovsky, F.
Golubinski, S. S. 2898
Gomes, A. M. de Azevedo 353
Gomes, L. G. de Sousa 977
Gonggrijp, J. W., Hulster, I. A. de, and Snijders, J. J. 1719
Goodell, B. C. 939
Goold, H. E. W. 1428
Goor, C. P. van 1803, 2929
Gorchakovski, P. L. 162
Gordon, A. *see* Tamblyn, N.
Gordon, W. A. 1908
Gorham, E. 2652
Gorrie, R. M. 2517, 2518
Goss, W. C. 544
Goto, R. *see* Nozu, R.
Gottlieb, S. *see* Day, W. C.
—, Day, W. C., and Pelczar, M. J., Jr. 2051
Gottstein, J. W., and Roberts, H. D. 2146
Gourlay, W. B. 3347
Govers, A. 3005
Govindarajan, V. S., and Sreenivasaya, M. 1746
Gračanin, M. 1805
Grace, L. A. de 246, 247
Graff, J. H., and Isenberg, I. H. 1327
Graham, K., Kinghorn, J. M., and Webb, W. E. 1206
—, and Richmond, H. A. 1206
Graham, P. H. 460, 1267, 1404, 3134
Graham, R. D. 1389, 2023
Grainger, M. B. 3562
Gramelspacher, C. U. 1293
Granholm, H. 1530
Graniti, A. *see* Castellani, E.
Grant, W. 3412
Granvik, B. A. 3091
Grasse, J. E. 2819
Grassé, P.-P. 2617
Grasso, V. 1620
Graves, A. H. 3385
Gray, N. E., and Buchholz, J. T. 2775, 2776
Greaud, R. 268
Greaves, C., and Harkom, J. F. 1436
Grechkin, V. P. 743
Green, E. L. 706

Green, G. W. *see* Sullivan, C. R.
Greenbank, D. O. 217
Greenslade, R. M. *see* Ripper, W. E.
Greenway, P. J. 1520
Gregory, G. R., and Person, H. L. 500
Greguss, P. 1149, 2980
Greidanus, G. 3533
Greider, H. W., MacArthur, R. A., and Gischig, L. C. 2159
Grenning, V. 815
Gressit, J. L. 2809
Griffioen, K. 461, 3236
Grindrod, J. 2179
Griswold, N. B., and McKnight, J. S. 612
Grivaz, F. 659
Grob, H. 3328
Grochowski, W. 1460
Grondal, B. L., and Zenczak, P. 3235
Groschke, F. 2401
Grosjean, J. 1486
Grossmann, B. 1252
Groszmann, H. M., Kelenyi, G. P., and Rodwell, C. N. 2688
Grugeon, R. *see* Mallinson, R. F. A.
Grundon, M. F. *see* King, F. E.
Gruschow, G. F. 309
Gualberto, V. 664
Guard, A. T. *see* Carpenter, I. W.
Guha, M. P. *see* Chatterjee, R.
Guha, P. C. *see* Patel, I. S.
Guigonis, G. 2869
Guilkey, P. C. *see* Gevorkiantz, S. R.
Guillaume, A. 3437
Guillaumin, A. 2840
Guinier, P. 343, 1026, 1065, 2638
Guise, C. H. 825
Gulisashvili, V. Z. 1909
Gumpelmayer, E. 2670
Gunckel, J. E. *see* Millington, W. F.
— *see* Rouffa, A. S.
Gunderson, H., and Decker, G. C. 2369
Gunning, R. H. *see* Rischbieth, J. R.
Günthart, G. 1597
Gupta, A. C. *see* Puri, G. S.
Gupta, R. S. 1639
Guptan, S. L. 726
Gurley, N. F. *see* Munguia, R. R.
Gustafson, F. G. 2302
Gustafsson, C. *see* Sundman, J.
—, Sundman, J., and Lindh, T. 3019
Gustafsson, G. R. 2158, 2161
Gutiev, G. T. 235
Guttenberg, S., and Duerr, W. A. 806
Gutzwiller, R. 2721
Guzmán, García, J. *see* Marques Mesa, A.
Gysel, L. W. 2762

H., C. H. R. *see* E., J. D. D.
Haagen-Smit, A. J., Wang, T. H., and Mirov, N. T. 1496, 1497
Haan, H. de 906
Haas, H. 383
Haase, H. 2646
Hack, R. B. 2779
Haddington, Lord 1673
Hadlington, P. 1589
Hagberg, E. 2589
Hagenstein, W. D. 3516
Hager, J. A. 1358
Hägglund, E. *see* Enkvist, T.
Hagman, M. 2672
Hahn, G. G. 3401
—, and Miller, A. 3400
Hahn, J. L. 2072
Hajšel, J. 648
Hakkarainen, A. E. 2283
Hale, C. E. 2608
Hale, J. D. 1232, 3129
Hall, B. A. 135
Hall, L. L. *see* Knowlton, G. F.
Halliday, W. E. D. 2755
Hamilton, A. D. 533
Hammond, F. R. 782
Hammond, R. N., and Billington, P. S. 531
Handel-Mazzetti, P. von 32
Handley, W. R. C. 2622
Hankerson, F. P. 3136
Hansen, H. P. 2582
Hanson, H. S. 1598
Hanzawa, M. 654
Hao, C. 881
Harkom, J. F. *see* Greaves, C.
Harley, J. L., and McCready, C. C. 2616
Harlow, W. M., and Harrar, E. S. 222
Harmon, R. 1945
Harrar, E. S. *see* Harlow, W. M.
— *see* Panshin, A. J.
Harris, C. M., and McKern, H. H. C. 3303
Harris, E. E. 600, 602
Harris, J. M. 2469
Harris, J. O., Allen, E. K., and Allen, O. N. 60
Harris, K. F. 1967
Harris, P. C. 3266
Harris, S. T. 1291
Harris, W. V. 2063
Härry, H. 5520
Harston, C. B. *see* Fuller, R. G.
Hart, C. E. 907
Hartley, C. 705, 3370
—, and Davidson, R. W. 2341
Hartley, G. S. *see* Ripper, W. E.
Harvey-Bathurst, B. A. F. 2376
Harwood, W. A. 2497
Hase, A. 2415, 2433
Hasel, A. A. 2474
— *see* Hornibrook, E. M.
Hatfield, I. *et al.* 1375
Hatter, J. *see* Cowan, I. McT.
Hauberg, P. *see* Thomsen, M.
Haudenschild, W. 3329
Hauptmann, H., and Nazáriô, L. Lacerda 944
Hawboldt, L. S., and Cuming, F. G. 216
Haycock, A. H. 451, 1257, 2102, 2107, 2140
Hayne, D. W. *see* Cardinell, H. A.
Haywood, G. 2163
Head, A. E., and Mack, J. J. 604
Heal, R. E. 2240
— *see* Kuna, S.
Hearmon, R. F. S. 1171
—, and Burcham, J. N. 3000
Hebb, E. A. 1622
Hechler, G. 556, 1178
Heck, G. E. 1525, 1531
Heebink, B. G., and Mohaupt, A. A. 468
Heebink, T. B., and Norris, C. B. 1278
Heiberg, S. O. 2824
—, and White, D. P. 3346
Heid, F. J. 2110
Heikinheimo, L. 3539
Heikinheimo, O. 1452, 2691
Heimburger, C. 2681
Heinig, M., and Martin, J. S. 532
Heinrich, K. 3132
Heinselman, M. L. *see* Arbogast, C., Jr.
— *see* Stoeckeler, J. H.
Heiskanen, V. 433, 2090, 2095
—, and Kantola, M. 3087
Heit, C. E. 272
Hejtmánek, C. J. *see* Mráz, C. K.
Heller, L. *see* Euler, H. von
Hellinga, G. 242, 2836
Helm, A. 1613
Hemmingsen, J. O. 2070
Henderson, F. Y. 1995
—, and MacDonald, J. 15
Hendricks, R. H. *see* Thomas, M. D.
Henning, W. 1722
Henrici, M. 1749
Henry, B. W. *see* Bretz, T. W.
Henze, O. 2388
Hepting, G. H., and Jemison, G. M. 2461
—, and Roth, E. R. 2342
—, and Toole, E. R. 2337
Hequist, K.-J. 2439
Herford, G. V. B. 3418
Hermann, A. *see* Anderson, A. B.
Hermann, F. J. 195
Hermans, P. H. *see* Preston, R. D.
Heron, R. J. 3450
Hertzler, R. A., and Smith, W. R. 586
Herzig, J. *see* Demann, W.
Heske, F. 879
Hesmer, H., and Meyer, J. 205
Hess, E. 3556
Hess, R. W. 2010, 2011, 2012
—, and Record, M. E. 2271
—, Wangaard, F. F., and Dickinson, F. E. 2965
Hetrick, L. A. 577
Heuer, I. 1802
Heuser, E., Shema, B. F., Shockley, W., Appling, J. W., and McCoy, J. F. 1200
—, Shockley, W., and Kjellgren, R. 1330
Heusler, K. *see* Schlitter, E.
Hewetson, C. E. 2796, 3514
Hickin, N. E. 3058
Hicock, H. W. *see* Olson, A. R.
Hide, R. H. 792, 798
Hikita, S. *see* Miki, S.
Hildebrand, F. H. 992, 1795, 2728
—, and Verduyn Lunel, F. A. 2573
Hiley, W. E. 850, 1043
—, Gill, P. J., and Constantine, A. K. 3543
Hilf, H. H. 1631
Hill, G. R. *see* Thomas, M. D.
Hill, J. L. 1219
Hill, R. R. 1652
Hillbom, T. 2081
Hille Ris Lambers, D. 1983, 2948
Hillis, W. E. 1514
Hills, G. A. 832
Hinkle, D. A., and Eisenmenger, W. S. 2301
Hirai, S. *see* Ohsawa, M.
Hirsch, P. *see* Plaisance, G.

Hirst, E. L., Hough, L., and Jones, J. K. N. 1515
—, Isherwood, F. A., Jermyn, M. A., and Jones, J. K. N. 386
Hirt, R. R. 1574
Ho, C.-C. 1016
Hoar, W. S. *see* Cowan, I.McT.
Hocking, G. H. 1541
Hodge, A. J., and Wardrop, A. B. 2987
Hoerner, T. G. *see* Munns, E. N.
Hof, T. 400
Hoffmann, D. B. 1528
Hogan, J. B. 1601
Högberg, K. G. *see* Euler, H. von
Hohenadl, W. 3476
Hohenlohe-Langenburg, Prinz K. 2421
Holcomb, R. A. 3247
Holder, J. van *see* Eeckhout, L.
Holdridge, L. R., Teesdale, L. V., Myer, J. E., Little, E. L., Jr., Horn, E. F., and Marrero, J. 7
Holimon, R., Leuthold, J. H., Agather, A. J., and Pierson, W. M. 2142
Holingren, H., Vay, F., Rubi, J., and Capo A. 1325
Holland, F. W. 2135
Hollinger, E. R. 458
Holm, R. 538
Holmberg, B. 95, 2657
Holmes, C. H. 1711
Holmes, G. D. 1084
— *see* Edwards, M. V.
Holmsgaard, E. 3497
Holsoe, T. 1974
Holst, W. 3186
Holt, L. 2904
Holte, T. *see* Bade, O. M.
Holzer, W. F. 2162
—, and Booth, K. G. 1328
—, and Lewis, H. F. 1332
Home, Sir J. M. 1979
Hönig, E. 804
Hopkins, J. S. 2581
Hopkins, R. P. 1288
Hopp, H. *see* Clarke, I. D.
Hora, F. B. 2767
Horber, E. 2399
Hordern, R. H. 453, 491, 2101, 2106
Horn, A. G. 663
Horn, E. F. *see* Holdridge, L. R.
Horncastle, D. C. 3097
Hornibrook, E. M. 2490
—, Larson, R. W., van Akkeren, J. J., and Hasel, A. A. 2475
Hornstein, F. 2574
Horsfall, L. G. *see* Howard, F. L.
Horton, J. S. 2319
Horvat, I. 2016, 2017, 2747
Hosie, R. C. 305
Hossack, G. W. 3120
Hotovy, R. 193
Houba, A. 928
Hough, A. F. 2326
Hough, L. *see* Hirst, E. L.
Hovind, J. H. *see* Wilde, S. A.
Howard, F. L. *see* Feldman, A. W.
— *see* Frederick, L.
—, and Horsfall, J. G. 3336
Howe, H. A. *see* Lacey, P. M. C.
Howes, F. N. 3292
Hoy, J. M. 2321
Hoyle, R. J., and Stillinger, J. R. 1238
Hsu, W.-C., Li, L.-Y., and L. C.-S. 57
— *see* Yen, P. C.
Hu, H.-H. 141
Hu, S.-Y. 1020
Huang, K. C., and Jang, C. S. 2235
Hubbard, J. K. *see* Kurth, E. F.
Hubbard, M. 1042
Hubbard, R. C. 2217
Huber, B. 3081
—, and Rouschal, E. 2658
— *see* Neger, F. W.
Huberman, M. A. 2597
Hubert, E. E. 712
Huckenpahler, B. J. 1882
Hudson, M. S. 1409
Huey, B. M. 1125
Huffman, J. E. 583
Hughes, G. K. *see* Anet, F. A. L.
— *see* Ewing, J.
—, and Neill, K. G. 646
Hughes, R. V., and Mackney, A. W. 1168
Hughes, W. G. 3558
Hugo, J. F. du T. *see* Coetzee, W. H. K.
Huguet, L. 1718
Hulbert, L. *see* Lawrence, D. B.
Hulme, M. I. 331
Hulster, I. A. de *see* Gonggrijp, J. W.
Hummel, F. C. 2507, 2864, 2941, p. 261
—, and Brett, I. 809
—, Irvine, T. W., and Jeffers, J. 2472, 2475
—, and Waters, W. T. 2476, 2478, 3486
Humphrey, J. D. *see* Kurth, E. F.
Humphreys, R. F. *see* Bryant, L. H.
Hunt, L. G. 1645
Hunt, R. W. 579
Huss, E. 2886
Hussain, S. A., Dollear, F. G., and O'Connor, R. T. 3306
Hustich, I. 1003
Hutchison, A. J. 1300
Huttinger, W. D. *see* Sartz, R. S.
Hyler, J. E. 450, 455, 456, 465, 476, 495, 1265, 2108, 2118, 2119, 2143, 3141
Hyttinen, A. *see* Schafer, E. R.

Il'inski, S. A. 3133
Iljin, W. S. 679
Ilvessalo, Y., 3482
Imazeki, R. 180
Ineson, F. A. *see* Rettie, J. C.
Ingle, H. D., and Dadswell, H. E. 1156
Inouye, Y., Nakamura, T., and Nishimoto, K. 568, 652
Irvine, T. W. *see* Hummel, F. C.
Isachenko, T. I. 1986
Isenberg, I. H. *see* Graff, J. H.
Isherwood, F. A. *see* Hirst, E. L.
Istvánffy, J. 299
Itkonem J. *see* Murto, J.
Ito, K. 2344
Ivanès, P. *see* Alliot, H.
Ivanov, L. A., Silina, A. A., and Tsel'niker, Yu. L. 1748
Ivanov, N. M. 2953
Ivanov, V. V. 94
Ivanova, E. N. 933
Ivens, G. W. *see* Woodford, E. K.
Jackson, J. K. 80
Jacob, G. R. 2145
Jacobs, K. 1664
Jacobsen, J. F. 23
Jacques-Félix, H. 2725
Jacquiot, C. 1900, 3206, 3472
— *see* Moreau, C.
Jagielski, A. 1565
Jagoe, R. B. 1876
Jahn, E. 1619, 1854, 2452, 2618
Jain, N. C. *see* Narayanamurti, D.
Jakobson, T. 508
James, L. M. 828
James, N. D. G. 826, 827
Jamison, J. V. III 3241
Jane, F. W. 352
Jang, C. S. *see* Huang, K. C.
Jarlsby, O. T. 2155
Jaurès, R., and Ferré, Y. de 1828
Jay, B. A. 337
Jayme, G. 529, 1338
Jeffers, J. *see* Hummel, F. C.
Jefferys, E. G. *see* Brian, P. W.
Jemison, G. M. *see* Hepting, G. H.
—, Lindemuth, A. W., and Keetch, J. J. 685
Jenkins, D. W. 1817
Jenkins, J. H. 12
Jennison, M. W. *et al* 394
Jenny, H. 62
Jensen, C. E. *see* Moessner, K. E.
Jensen, W. 358, 509, 1508, 2232, 3184
—, and Nuotio, J. 3025
Jermyn, M. A. *see* Hirst, E. L.
Jessup, R. W. 1836
Jezierski, A. 1080
Jobson, A. 3125
Joergensen, C. *see* Warrack, G.
Johanson, S. 511
Johnson, A. M. *see* Marshall, H. B.
Johnson, F. A. 2486
—, Kallander, R. M., and Lauterbach, P. G. 3487
Johnson, G. M. 422
Johnson, J. W. 1905, 1977
Johnson, M. A. 2703
Johnson, R. P. A. 1439
Johnson, R. S. 1902
Johnsson, H. 970
Johnston, I. M. 192
Jolly, N. W. 1972, 2481
Joly, R. 1592
Jones, A. P. D. 2543
Jones, E. W., 257, 2826
Jones, I. R. 1419
Jones, J. A., and Niswander, R. V. 1394
Jones, J. K. N. *see* Hirst, E. L.
Jones, T. G. H. *see* Davenport, J. B.
Jordan, C. A. 1253
Jovanović, B. 1806, 2718, 2834
Jovanović, S. 3565
Jovet, P. 196
— *see* Senay, P.
Juhren, G. 2373
—, and Eaton, V. 1557
Julander, O. *see* Arend, J. L.
Jurriaanse, A. 1523

Kabanov, P. G. 1121
Kadambi, K. 999, 1635, 1809, 2521, 2781, 3460
—, and Raghavan, M. S. 1484
Kadita, S., and Nakatu, K. 369
Kagis, I. 2551

Kajanne, P. 3026
Kajanoja, P. 2256
Kalandra, A. 751, 1615, 2248
Kalashnikov, A. F., and Romanov, A. A. 935
Kallander, R. M. *see* Johnson, F. A.
Kalt, M. *et al.* 3222
Kantola, M. 859, 3073
— *see* Heiskanen, V.
Kantor, J. 226
Kaplan, J. 1503
Kapuscinski, S. *see* Borusiewicz, A.
Karasev, G. M. 1120
Karba, D. 2211
Kárpáti, Z. 2801
Karpínski, J. J. 156, 208
Karschon, R. 2882
Karvonen, M. 857
—, and Kunnas, M. 858
Kassas, M. 2764, 2826
Kastrukoff, M. 1970
Kas'yanov 323
Kaufert, F. H. *see* Clausen, V. H.
Kean, R. I. *see* Pracy, L. T.
Keaton, C. M. 547
Keay, R. W. J. 1837, 1838
Keck, D. D. *see* Munz, P. A.
Keeley, D. E. 584
Keen, B. A. 2643
Keen, E. A. 2483
Keen, F. P. 764
Keener, P. D. 2769
Keenleyside, H. L. 871
Keetch, J. J. *see* Jemison, G. M.
Keller, E. L. *see* McGovern, J. N.
Keinanen, S. P. J. 3238
Kelenyi, G. P. *see* Groszmann, H. M.
Keller, J. 2870
Kelley, A. P. 1728
Kellog, C. E., and Davol, F. D. 937
Kelly, J. A. B., and Place, I. C. M. 248
Kelly, J. L. 1228
Kelsey, J. M. 1204
Kenaga, D. L., and Sproull, R. C. 1376
Kennedy, D. E. 1532
Kennedy, P. S. 1354
Kennedy, W. B. 3165
Ker, J. W. 3478
Keresztesi, V. 1952
Kern, J. D. *see* Turner, H. D.
Kernan, H. S. 1058
Kerr, T. W., Jr. 754
Kesler, W. 289
Keylwerth, R. *see* Kollmann, F.
Kharitonovich, F. N. 320
Kiellander, C. L. 2695
Kimball, M. H. *see* Barton, A. J.
Kinberg, W. 3198
Kind, H. E. *see* Schmidt, M.
King, D. B., Roberts, E. V., and Winters, R. K. 919
King, F. E., and Grundon, M. F. 1192
King, F. W., and Bender, F. 3190
King, H. 644
King, L. J., Lambrech, J. A., and Finn, T. P. 3361
Kinghorn, J. M. *see* Graham, K
— and Webb, W. 3086
Kingston, R. S. T. 3015
Kinka, W. 2934
Kirby, R. H. 2260, 3314
Kirkpatrick, R. E. 2098
Kirkup, A. 3079
Kirst, G. 2999
Kishen, J. *see* Rehman, M. A.
Kisser, J., Köli, G., and Steininger, A. 2173
—, and Lehnert, I. 2984
—, Mazek-Fialla, K., and Serentschy, W. 3299
Kivelä, A. 438
Kjaer, A. 2888
Kjellgren, R. *see* Heuser, E.
Klauditz, W. 1180, 2171
Kleeck, A. van, and Martin, T. J. 1350
Klem, G. G. 1323, 3083
Klem, K. H. 1319
Klepac, D. 844
Kleyn, A. V., and Kulish, P. A. 2193
Klika, J. 2736
Klomparens, W. 3051
Kloot, N. H. 2033
Kloot, W. G. van der 241
Klose, A. A., Stark, J. B., Purvis, G. G., Peat, J., and Fevold, H. L. 1489
Knapo, A. 3334
Knapp, R. 2735
Kňazovický, J. 1887
Knebel, R. *see* Sasin, J.
Knežević, M. 2141, 2207, 3162
Knocker, J. H. L. 3417
Knowlton, G. F., and Hall, L. L. 2426
Knuchel, H. 2516
Kobayshi, Y. 357
Kobuski, C. E. 203, 1848
Koepeli, J. B., Mead, J. F., and Brockman, J. A. 1482
Kohler, E. J. *see* O'Brien, R. E.
Kolakovski, A. A. 1824
Kolář, J. 634
Köli, G. *see* Kisser, J.
Kollmann, F. 539, 540, 1227, 1408, 2037
—, and Dosoudil, A. 3193
—, and Keylwerth, R. 3111
Koltay, G. 228
Kolubajiv, S. 783, 784
Kommers, W. J. *see* Norris, C. B.
Kondô, T. *see* Uoda, H.
Konis, E. 98
Koniusky, F. R. *see* Rogers, E. F.
Kools, J. F. 2079
Kopp, W. 2408
Koppel, C. van de 2216
Koppikar, V. B. 2320
Korchemkin, F. I. 1179
Korobkin, V. A. 3234
Koroleff, A. 425, 439, 1231, 1549
Korotkov, I. L. 1488
Korsuň, F. 790, 793, 794
Kort, A. 1879
Kosaki, T. *see* Yatagai, M.
Köse, S. 2105, 2222
Koshi, T. *see* Ranganathan, S. K.
Köstler, J. 1038
Kostoff, D. 114
Kotschwar, A. 918
Kovalev, V. P. 2167
Kowal, R. J. 1223, 2186
Kowanicz, W. 950
Kōzai, Y. *see* Nozu, R.
Kozdera, J. 862
Kozhin, N. I. 797
Kozikowski, A. 2437
Koziol, F. C. *see* Atwater, M. M.
Kraemer, G. D. 2410
Kraemer, J. H. 3012
Kraemer, O. 3146
Krajicek, J. E. *see* Brinkman, K. A.
Krajski, W. 2950
Kramarov, I. I. 301
Kramer-Drauberg, O. 1303
Krasil'nikov, P. K. 1777
Kraske, W. A. *see* McGovern, J. N.
Kratzl, K. 3032
Krause, R. L. 2182
Krejci, J. 1263
Kremers, R. E. 565
Krenn, K. 803
Kress-Richter, I. *see* Montfort, C.
Krishna, S., and Badhwar, R. L. 1505, 1506
Kriška, S. 1096
Krogh, P. M. D. 566
Kroulík, A., and Soukup, J. 564
Kruedener, A. Frh. von 68
Krueger, N. T. *see* Bell, E. R.
Krukoff, B. A., and Letouzey, R. 188
Krupenikov, I. A. 96, 119
Kryzhanovski, K. V. 1066
Küchler, A. W. 993, 994
Kuemmerling, K. K. 411
Kuenzel, J. G. 620
Kuenzi, E. W. 467
Kukachka, B. F. *see* Reno, J.
Kulesza, J. 3202
Kulish, P. A. *see* Kleyn, A. V.
Kulp, D. A. *see* Walters, C. S.
Kumagay, A. *see* Patetta, J. J.
Kump, E. J. 606
Kuna, S., and Heal, R. E. 2239
Kunnas, M. *see* Karvonen, M.
Künning, H. 111
Kuntz, J. E., and Riker, A. J. 3389, 3390
— *see* Beckman, C. H.
Kuprevich, V. F. 1752
Kurentsov, A. I. 1033
Kurth, E. F. 1457
—, Hubbard, J. K., and Gekeler, M.
—, Hubbard, J. K., and Humphrey, J. D. 1458, 1459
Kurup, P. A., and Rao, P. N. L. 1487
Kuttis N. 1305

Laas, D. 1500
Lacey, P. M. C., and Howe, H. A. 2134, 3159, 3160
Lachaussée, E. 71, 1800
Lack, D. 1586
Lacourly, G. 42, 916
Lahey, F. N. *see* Brown, R. D.
—, Lamberton, J. A., and Price, J. R. 2236
—, and Thomas, W. C. 645
Lajoy, M. H. *see* Rowley, F. B.
Lamb, A. F. A. 1717
Lamb, G. N. 347, 365, 1133, 2001, 2970
Lamberton, J. A. *see* Lahey, F. N.
Lambrech, J. A. *see* King, L. J.
Lamothe, G.-E. 3074
Lamotte d'Incamps 3244
Lamprecht, H. 2872, 3340
Lane, R. D. *see* Schnur, G. L.
Lange, P. W. 3017
Langelez, A. 1193
Langlands, I., and Thomas, A. J. 666
Lanjouw, J. 1008
Lanyi, J. 1046
Lappi, Seppälä, M. 885

Larkins, R. M. 2144
Larsen, C. S. 2679
Larson, R. W. *see* Hornibrook, E. M.
Larue, P. 3121
Lassenius, T. 507
Latham, B. 1136, 1998
Latour, J.-M. *see* Léonard, J.
Laudelot, H. 2634
Laudermilk, J. D. *see* Munz, P. A.
Lauterbach, P. G. *see* Johnson, F. A.
Lavoine, J. *see* Gatheron, J.-M.
Law, K. 395
Lawrence, D. B. 3499
—, and Hulbert, L. 1729
Lawson, D. I. 589
— *see* Fordham, J. H.
Lay, K. K. 1032
Lebrun, J. 1812
LeCacheux, P., and Peteri, R. 514
Ledoux 437
Legrand, D. 3311
Legris, P. 1031
Lehnert, I. *see* Kisser, J.
Lehotský, L. 1083
Lehrbas, M. M. 1403, 2164
Leibundgut, H. 2891, 2918
Leira, A. R. 231
Leischner, G. 1407
LeJeune, R. R. 1617
—, and Black, W. F. 1618
— *see* Burbidge, D.
Lekander, M. 3423
Leman, V. M. 288, 1942
Lemmien, W. 283
Lentz, A. N. *see* Moore, E. B.
Lentz, P. L. 729
Léonard, J. 1027, 2792, 2793, 2797
—, and Latour, J.-M. 1842
—, and Troupin, G. 2798
Leopold, A. S. 1870, 2756
Leporsky, A. 789
Leroy, R. 3531
Leskinen, S. 2089
— *see* Tuovinen, A.
Leslie, A. P. 1690
Lethlean, H. V. 1336
Letouzey, R. *see* Krukoff, B. A.
Leuthold, J. H. *see* Holimon, R.
Levaković, A. 3505
Lew, T. W., and Cheu, S. P. 769
Lewis, H. F. 1456
— *see* Holzer, W. F.
—, Wise, L. E., and Browning, B. L. 1326
Leyton, L. 2632
Lhota, O. *see* Mařan, B.
Li, C.-S., Chang, P. L., and Yang, S. L. 2893
— *see* Hsu, W.-C.
— *see* Li, L.-Y.
Li, L.-Y. *see* Hsu, W.-C.
—, Li, C. S., and Yang, N. C. 2854
— *see* Wu, C. C.
Libby, C. E., and O'Neil, F. W. 3180
Liebermann, J. 1686
Liégeois, P., and Petit, P. 22
Liese, J. 3210
Lieser, T., and Schaack, W. 2040
Lihtonen, V. 3512, 3513
Liming, O. N. *see* Shafer, T.
Limstrom, G. A. 1960
—, and Merz, R. W. 1108
— *see* Stoeckeler, J. H.
Linde, R. J. van der 2946, 2947
Linden, P. J. van der 3203, 3204
— *see* Ardikoesoema, R. I.
Lindenmuth, A. W. *see* Jemison, G. M.
Lindgren, R. M. 1167
Lindh, T. *see* Gustafsson, C.
Lindsay, R. C., and Baisinger, D. H. 1926
Lindstedt, G. 3036, 3037, 3038, 3041, 3042, 3043
— *see* Alvarez-Nóvoa, J. C.
Lindström, K. B. 3554
Ling, L. *see* Cummins, G. B.
Linnamies, O. 2488
Lipka, W. 1274
Liska, J. A. 3009
Lister, S. 3112
Little, E. L., Jr. 2726
— *see* Holdridge, L. R.
Little, S., and Moore, E. B. 1071
Little, S., Jr. 2822
Littlefield, E. W. 2824
Livshits, M. L. 3239
Llensa de Gelcén, S. 1840, 1885
Lloyd, R. C. 1605
Lloyd, W. J. *see* Gessel, S. P.
Lloyd, W. R. *see* Munguia, R. R.
Lockard, C. R., Putnam, J. A., and Carpenter, R. D. 2064
Locke, S. B. 2330
Locker, R. H. *see* Briggs, L. H.
Loe, J. A. *see* Briggs, L. H.
Loehr, R. C. 624
Löfgren, B. E. 1405
Lohwag, K. 1198
Lončar, I. 260
Long, F. L. *see* Clements, F. E.
Long, W. G. *see* Bretz, T. W.
Longwood, F. R. 1904
Loos, C. A. 2362
Loosjes, F. E. 3431
Lordat, J. de 1714
Lorenz, R. W. *see* Boggess, W. R.
—, and Fox, H. W. 807, 2960
Lorenzi, O. de 3250
Lositski, K. B. 2847
Lothigius, W. 2897
Loustalot, A. J., and Delgado, R. F. 3367
—, Muzik, T. J., and Cruzado, H. J. 3366
—, and Pagan, C. 1483
Louvel, M. 1914
Love, W. B. 3076
Lowe, C. J. *see* Beall, H. W.
Luchini, R. 338
Lüdi, W. 2709
—, and Zoller, H. 2606
Lüdtke, M. 1160
Lukkala, O. J. 1537, 3355
Luk'yanov, B. 271
Lull, H. W., and Orr, H. K. 940
Luncz, G. 317
Lundegårdh, H. 983
Lunt, H. A. 51, 1455
Lussier, O. 1716
Luteršek, D. 3457
Luttrell, E. S. 2353
Lutz, J. L. 2734
Lysenko, T. D. 321, 1989

M., C., and M., I. 1950
M., K. S. 2130
Maack, R. 2763
MacAndrews, A. H. 2824
McArdle, R. E., Meyer, W.H., and Bruce, D. 823
MacArthur, R. A. *see* Greider, H. W.
McBride, C. F. 3055
McBride, R. S. *see* Fons, W. L.
McCaleb, S. B., and Cline, M. G. 1736
McCarthy, J. L. *see* Markham, A. E.
McColl, B. J. 430, 1552, 3092
McComb, A. L. *see* Thomson, G. W.
McCoy, J. F. *see* Heuser, E.
McCraw, W. E. 668, 2279
McCready, C. C. *see* Harley, J. L.
McCubbin, W. A. 2336
McCulley, R. D. 2519
McCullough, H. A. 2857
McCully, W. G. *see* Young, V. A.
McDermid, H. B. 2223
MacDonald, D. A. 3541
MacDonald, J. 1797
— *see* Henderson, F. Y.
MacDonald, J. A. B. 1100
MacDonald, M. D. *see* Wittkopf, J. J.
McDonough, E. S., and Bell, L. 3045
—, Bell, L., and Arnold, G. 3044
McEwen, J. M. 513
McGlothlin, L. D. *see* Sawyer, F. G.
McGovern, J. N. *see* Brown, K. J.
—, Brown, K. J., and Kraske, W. A. 524
—, Keller, E. L., and Martin, J. S. 528
—, and Mackin, G. E. 3181
McGregor, E. A. 2814
MacGregor, J. J. 661
MacGregor, W. D. p. 3
Maciejowski, K. 2830
McInteer, B. B. 3498
McIntosh, D. C. 409
McIntosh, R. P., and Curtis, J. T. 1816
McIntosh, W. G., and Church, J. W. 482
McIntyre, A. C. 3123
—, and Mirantz, M. 3085
Mack, J. J. 1245
— *see* Head, A. E.
Mackay, J. H. E. 3402
McKay, J. W. 123
Mackenzie, A. M. 1975
Mackenzie, A. R. 249
McKenzie, H. J. 1387
McKenzie, W. 2487
McKern, H. H. G. *see* Harris, C. M.
— *see* Penfold, A. R.
Mackney, A. W. *see* Hughes, R. V.
McKnight, J. S. *see* Griswold, N. B.
McLaren, C. G., and Burgy, M. P. 2084
MacLean, H., and Gardner, J. A. F. 1462, 1463
MacLean, J. D. 1363, 3215
McMillen, J. M. 3224, 3227
— *see* Rasmussen, E. F.
McMinn, R. G. 2765
McNally, J. A. 3096
McNeill, W. M. 1867
McQuilkin, W. E. 1943, 2293
Magee, G. M. 3246
Magini, E. 3470
Magyar, P. 300
Maheu, C.-F. 1212, 3070
Mahmud, K. A. 2361
Mahood, I. 2553
Majumdar, G. P., and Mitra, G. C. 134
Makkonen, O. 416, 417, 418, 3071, 3072

Maksimović, M. 3448
Maksymov, J. 3440
Maku, T. 366
—, and Matsumura, T. 366
Malandrino, N. 985
Malcolm, F. B. 3175
Mallet, J. 2588, 3530
Mallinson, R. F. A., and Grugeon, R. 3315
Malm, E. *see* Björkman, E.
Malsberger, H. J. 3518
Mamet, R. 312
Mann, J. W., and Russell, G. F. 3158
Mann, R. H. 1388
Mann, W. F. 1896
Manning, D. E. B. *see* Braithwaite, J. D.
Manning, W. E. 1841
Manol, A.-G. 1370
Mantell, C. L. 2243
Mařan, B. 49, 69
—, and Lhota, O. 924
March, H. W. *see* Norris, C. B.
Marchionatto, J. B. 731
Marckworth, G. D. 2572
Mark, H. F. 1177
Markgraf, F. 2745
Markham, A. E., Peniston, Q. P., and McCarthy, J. L. 1187
Markov, E. *see* Minčev, B.
Marks, J. B. 171
Marpillero, P. 549
Marques Mesa, A., Guzmán García, J., Cravioto, R. O., and Calvo de la Torre, J. 2664
Marrero, J. 1076, 2874
— *see* Holdridge, L. R.
Marsden, D. H. 3341
Marshall, H. B., and Johnson, A. M. 2153
— *see* Sitch, D. A.
Marsico, G. 912
Marstrander, J. H. *see* Godske, C. L.
Marth, P. C. *see* Wester, H. V.
Martin, E. V. *see* Clements, F. E.
Martin, F. L. 199
Martin, J.-J.-E. 48
Martin, J. S. *see* Heinig, M.
— *see* McGovern, J. N.
Martin, P.-H. 432, 1229
Martin, P. J. *see* Bryant, L. H.
Martin, T. J. *see* Kleeck, A. van
Martínez, M. 1010, 1015, 1829, 2773, 2774
Martinez-Falero y Arregui, J. 1739
Martini, M. de. 667
Marts, R. O. 327, 2007, 2957
Marudarajan, D., Ramakrishnan, T. S., and Soumini, C. K. 721
Maruelle 2314
Masani, N. J. 2285, 3333
Matagrin, A. 569
Mathewson, J. S. 3004
Mathiesen, A. 399, 3053, 3510
Mathieu, H. 3255
Mathon, C.-C. 996, 997
Mathur, R. N. 1864, 1866, 2866, 2807, 2808
Matson, E. E. 3178
—, and Rapraeger, H. A. 2942
Matsumura, T. *see* Maku, T.
Matthews, J. D. 960
Mattos, A. de, Jr. *see* Occhioni, P.
Matusz, S. 1078
Matuszkiewicz, W. 1783
Matyuk, I. S. 1068, 1957
Maugini, E. 2994
Mayer-Wegelin, H. 2598
Mayfield, P. B. 561
Mazek-Fialla, K. *see* Kisser, J.
Mead, J. F. *see* Koepeli, J. B.
Meagher, G. 252, 653
Mehra, P. N. 1775
Meiler, J. G. 552
Melin, E., and Nilsson, H. 59
Mellor, H. C. 2221
Melville, R. 294
— *see* Wokes, F.
Mendoza, G. *see* Fernandez-Prida, C.
Meniaud, J. 864, 2973
Merewether, J. W. T. 2041
Merker, E. 2416, 2420, 2423
Merz, R. W. *see* Limstrom, G. A.
Mesavage, C. 800
Meschini, A. 2466
Mesnil, H. 35
Messeri, A. 1498, 3297
Mestre, L. 1984
Metcalfe, C. R., and Chalk, L. 354
Métro, A, 238, 1883
Metz-Noblat, H. de 245
Meyer, A. 2453
Meyer, H. 3561
Meyer, H. A. 3532
Meyer, J. *see* Hesmer, H.
Meyer, K. A. 2576
Meyer, P. 2744
Meyer, W. H. *see* McArdle, R. E.
Meyrat, A., and Reichstein, T. 3286
Mezzetti, A. 2363
Michael, K. *see* Müller-Stoll, W. R.
Michaud, J. 454, 1256
Michelson, A. 2570, 2974
Midgley, A. R. 1249
Mielke, J. L. 3442
Mikheev, S. D. 3099
Miki, S., and Hikita, S. 2694
Mikola, P. 873
Milas, B. 307
Milbrath, J. A., and Young, R. A. 713
Miles, T. R. 1268
Millares, R. *see* Munguia, R. R.
Miller, A. *see* Hahn, G. G.
Miller, A. A. 1797
Miller, C. A. 218
Miller, C. I. 2074
Miller, C. W. 2500
Miller, D. G. 2136, 3144
Miller, J. H. 2338
— *see* Campbell, W. A.
Miller, J. M. 961
Miller, O. B. 771
Miller, P. A. *see* Barton, A. J.
Millett, M. R. O. 1750
Millett, R. S. 1395
Millington, W. F., and Gunckel, J. E. 137
Milliron, H. E. 2427
Minčev, B., Požarliev, G., Nikolčev, K., and Markov, E. 2229
Minckler, L. S. 966
Mindermann, G. 2296
Minervini, I. 2992
Mirams, R. V., and Chapman, V. T. 2855
Miranda, F., and Sharp, A. J. 1004
Mirantz, M. *see* McIntyre, A. C.
Mirimanoff, A. *see* Stadelmann, R.
Mirković, D. 3479
Mirov, N. T. *see* Haagen-Smit, A. J.
Mishustin, E. N. *see* Shcherbakov, A. P.
Mitchell, R. L., and Ritter, G. J. 1188, 3024
Mitra, C. *see* Bhattacharji, S.
Mitra, G. C. *see* Majumdar, G. P.
Mitscherlich, E. A. 1724
Mityakov, N. 3102
Moeller, A. 883
Moessner, K. E. 833
—, Brunson, F. D., and Jensen, C. E. 834
— *see* Garver, R. D.
Moffett, L. 2147
Mohaupt, A. A. *see* Heebink, B. G.
Möhler, K. 373
Moilanen, M. *see* Enkvist, T.
Molchanov, A. A. 55
Moldenke, H. N., and Moldenke, A. L. 900
Molina Rodriguez, F. 1763
Molinier, R., and Tallon, G. 995
Mölling, H. A. 3078
Molotov, P. I. 557
Money, L. L., Bailey, I. W., and Swamy, B. G. L. 1774
Money, P. L. 2263
Monroe, A. F. *see* Arend, J. L.
Montagnac, R. 1521
Montfort, C., and Kress-Richter, I. 2654
Montgomery, R. H. 3093
Montiel Sanchez, T. 1109
Mook, P. V. *see* Verrall, A. F.
Mooney, H. 1790
Moore, E. B., and Lentz, A. N. 3559
— *see* Little, S.
Moorhead, G. R. *see* Somes, H. A.
Moran, B. J. J. 75
Moran, T. H. 3196
Morandini, R. 1921
— *see* Allegri, E.
Moreau, C., Moreau, M., and Jacquiot, C. 720
Moreau, M. 2351
— *see* Moreau, C.
Moreton, B. D. 1855
Morettini, A. 104
Morin, R. A. *see* Campbell R. A.
Mork, E. 2739
Morley, T. 2704
Morris, R. F. 2805
Morrison, F. R. *see* Penfold, A. R.
Morrow, R. R. 2845
Morselli, G. *see* Bonino, G. B.
Mort, G. W. 1743
Mosby, H. S. 2544
Moss, E. H. 121
Moulds, F. R. 2273
Mouterde, P. 1810
Moutia, L. A. 772
Mouton, G. 2232
Mowat, E. L. 1911, 2848
Moyse-Mignon, H. *see* Paris, R.
Mráz, C. K., and Hejtmánek, C. J. 227
Mukherjee, S. 187, 1835
Mukherjee, S. K. 968
Mukula, J. 2324
Muldrew, J. A. 3451
Müller, F. 610, 2400
Müller, P. 25
Müller-Stoll, H. 2580
Müller-Stoll, W. R. 100, 2985
—, and Michael, K. 1773
Müller-Using, D. 658

Mullerried, F. K. G. 1650
Mulligan, B. O. 1041
Münch, E. 3339
— *see* Neger, F. W.
Munguia, R. R., Millares, R., Gurley, N. F., and Lloyd, W. R. 1511
Muniz, P. J. Costa 2932
Munns, E. N., Hoerner, T. G., and Clements, V. A. 3473
Muñoz, V., D. *see* Torricelli, D., E.
Munro, J. A., and Post, R. L. 777
Munthe, B. P. *see* Youngquist, W. G.
Muntz, H. H. 2945
Munz, P. A., and Keck, D. D. 1007
—, and Laudermilk, J. D. 1029
Muranský, S. 154
Murphy, P. W. 932, 2619
Murto, J., and Itkonen, J. 1333
Murto, J. O. 530, 3185
—, and Perolahti, O. 2160
Muzik, T. J. *see* Loustalot, A. J.
Myer, J. E. *see* Holdridge, L. R.

Nadkarni, M. D., Airan, J. W., and Shah, S. V. 1513
Nagel, J.-L. 3496
Nägeli, G. 3330
Nair, K. R. 3, 4, 2100
Nájera y Angulo, F. 1424
Nakamura, T. *see* Inouye, Y.
Nakatu, K. *see* Kadita, S.
Nank, E. E. *see* Chadwick, L. C.
Narasimhachari, N., and Seshadri, T. R. 1472
Narayanamurti, D., and Chimma, A. S. 3151
—, and Das, N. R. 1343
—, and Jain, N. C. 1284
—, and Pande, J. N. 1280, 1282
—, and Prasad, B. N. 1292, 2020
—, Ranganathan, V., and Bist, B. S. 1344
—, Ranganathan, V., and Dabral, M. L. 1283
—, Ranganathan, V., and George, J. 550
—, and Singh, J. 1285
Narayanan Nambiyar, V. P. 2008
Nash, R. W. *see* Peirson, H. B.
Natarajan, S. *see* Rao, R. R.
Natividade, J. Vieira, 3270
Naude, T. J. 573
Navalkar, B. S., and Bharucha, F. R. 2651
Naves, Y.-R., and Ardizio, P. 3304
Navez, R. 1069
Nazáriô, L. Lacerda *see* Hauptmann, H.
Nečesaný, C. V. 25
Neef, L. P. 2842
Neger, F. W., Münch, E., and Huber, B. 2777
Neill, K. G. *see* Hughes, G. K.
Nekrasova, T. P. 2831
Nélis, E. *et al.* 1880
Nelson, T. C. 1733
Němec, A. 678
Netupskaya, S. V. *see* Pentegov, A. P.
Neubauer, L. W. 2175
Neusser, H. 1279
Neves, C. M. Baeta, 157, 1587
Newhouse, P. D. *see* Berkey, W. E.
Newton, R. W. B. 2924
Nichols, W. 473
Niedziałkowski, W. 1648
Nielson, P. C. 2585
Nikitin, N. I., Rudneva, T. I., Zaitseva, A. F., and Chochieva, M. M. 392
Nikitin, P. D., and Bredikhina, L. N. 923
Nikolaeva, M. G. 1931
Nikolčev, K. *see* Minčev, B.
Nilsson, H. *see* Melin, E.
Nimmo, M. 1101
Nishimoto, K. *see* Inouye, Y.
Nispen tot Pannerden, J. E. M. van *see* Vink, A. P. A.
Nisula, P. 795
Niswander, R. V. *see* Jones, J. A.
Nixon, W. A. 2914
Nizi, G. 3464
Noakes, D. S. P. 1412
Nobles, M. K. 3050
Noirfalise, A. 153
—, and Galoux, A. 2740
Noisette, A. *see* Venet, J.
Nord, F. F. 397
— *see* Schubert, W. J.
Norgin, V. J. 3471
—, and Cafley, J. D. 802
— *see* Buckland, D. C.
Norkrans, B. 396
Normand, D. 2981
Norris, C. B. 3007
—, Ericksen, W. S., March, H. W., Smith, C. B., and Boller, K. H. 469
—, and Kommers, W. J. 3149
— *see* Heebink, T. B.
Northumberland, Duke of 1656
Novak, P. S. 2833
Novogrudski, D. M. 322
Nowak, A. 1166, 1360
Nozu, R., Gotō, R., and Kōzai, Y. 471
Nunberg, M. 1544, 1600, 2438
Nunn, J. R., and Rapson, W. P. 1191
Nuotio, J. *see* Jensen, W.

Obaseki, J. K. 3313
Obaton, F. 835
O'Brien, R. E., and Kohler, E. J. 936
Occhioni, P. 1009
—, and Mattos, A. de, Jr. 356
O'Connor, R. T. *see* Hussain, S. A.
Odum, E. P. 2817
Offner, J., and Breitstroffer, M. 2713
Ogden, W. H. 1425
Ogievski, V. V. 1067
Ögland, N. J. 1454, 3192
Ogura, T. 591
Ohsawa, M., and Mirai, S. 364
Olberg, A. 1973, 3507
Olbrich, A. 1980
Oliveira, A. Peixoto de 870
Olsen, L. P. *see* Gevorkiantz, S. R.
Ol'shanski, M. A. *see* Rodionov, A. D.
Olson, A. R., Chapman, G., and Hicock, H. W. 801
—, and Hicock, H. W. 1413
Olson, W. Z. *see* Blew, J. O.
O'Neil, F. W. *see* Libby, C. E.
Ongley, P. A. *see* Badger, G. M.
Oosting, H. J., and Billings, W. D. 2760
Oppenheimer, R. 1751
Orłoś, H. 1195, 1490, 1566
Orman, H. R. 1174
Orr, H. K. *see* Lull, H. W.
Orr-Ewing, A. L. 2371
— *see* Garman, E. H.
Osmaston, H. A. 3521
Osmolovski, G. E. 1593
Otamendi, J. D. 2432
Othmer, D. F., and Ricciardi, L. G. 543
Oudemans, T. C. 1542
Ouden, P. den 293
Oudin, A. 1499
Ouwehand, M. 3540
Overdijkink, G. A. 1981
Ovington, J. D. 2925
Ozolin, G. P. *see* Rovski, V. M.

Paclt, J. 2784
Paddock, W. R. 3182
Paddon, T. W. 1440
Pagan, C. *see* Loustalot, A. J.
Page, P. R. 1964
Paish, H. P. S. 1216
Palm, T. 2412
Palosuo, V. 2267
Pam, A. 1756
Pande, J. N. *see* Narayanamurti, D.
Panov, A. 1920, 2666
Panshin, A. J., Harrar, E. S., Baker, W. J., and Proctor, P. B. 1127
Pant, G. D., and Chatterjee, N. C. 1868
— *see* Roonwal, M. L.
Paolis, D. de 1154, 2996
Papy, R. 178
Paredes, C. A. 175
Parihar, D. B., and Dutt, S. 1512
Paris, R., and Moyse-Mignon, H. 640
Park, O., Auerbach, S., and Corley, G. 2811
Parke, W. N. 877
Parker, H. A. 2489
Parker, J. 224, 269, 2297
Parks, L. M. *see* Svoboda, G. H.
Parrot, A. G. 730, 908, 986
Parthasarathy, S. V. *see* Chandrasekharan, S. N.
Partos, G. 303
Pascoe, T. A., and Scheffer, T. C. 1220
Patel, I. S., and Guha, P. C. 2249
Patetta, J. J., Kumagay, A., Vay, F., Rubi, J., and Capo, A. 1334
Patrone, G. 1633
Paul, B. H. 403, 1208
—, and Smith, D. M. 3065
Pauley, S. S. 1767, 2571
Paulsen, H. A. *see* Glendening, G. E.
Pavan, C. *see* Black, G. A.
Pavari, A. 915, 920, 1049, 1760, 1801, 1834, 2568, 2780
— *see* Biraghi, A.
Pavgi, M. S. *see* Thirumalachar, M. J.
Pavitt, H. A. 2139, 3113
Peace, T. R. 1564
Pearsall, W. H. 2641
Pearson, G. A. 2823
Pearson, G. E. H. *see* Gibson, W. R.
Pearson, R. G. 375
Peat, J. *see* Klose, A. A.
Pechanec, J. F. *see* Coldwell, T.
Peck, E. C. 3128
Pedersen, A. V. 1533
Pedro, J. G. 144
Pedro, S. de *see* Echeverria, I.
Peer, K. C. *see* Deong, E. R.

Peevy, F. A. 1117
— *see* Campbell, R. S.
P'ei, C. 991
Peirson, H. B., and Nash, R. W. 1950
Pejoski, B. 650, 651, 3293
Pekkala, M. 884
Peklo, J., and Šatava, J. 1035
Pelczar, M. J., Jr. *see* Day, W. C.
— *see* Gottlieb, S.
Pelíšek, J. 70
Pelkwijk, A. J. ter 198
— *see* Beijerinck, W.
Pellegrin, F. 1019
Pelly, R. S. 3110
Pendleton, R. L. 2555
Penfold, A. R. 1504
—, Morrison, F. R., McKern, H. H. G., and Willis, J. 3301
Peniston, Q. P. *see* Markham, A. E.
Pentegov, A. P., and Netupskaya, S. V. 2251
Pentz, P. G. 479
Pepe, G. 3463
Perbohner, S. 1431
Perem, E. 374, 3008
Perez Gambet, C. M. 3289
Perez, L. 1362
Perolahti, O. *see* Murto, J. O.
Perreault, H. C. *see* Bergeron, J. R.
Perret, G. 1359
Perret, J.-E., and Berger, G. 3426
Perrier de la Bathie, H. 351
Perry, L. M. 1845
Perry, R. A. *see* Specht, R. L.
Perry, T. D. 452, 480, 2277, 2467, 3143, 3228, 3318
Person, H. L. *see* Gregory, G. R.
Persson, E. 3563
Pesante, A. 2352
Péter-Contesse, J. *see* Gäumann, E.
Peteri, R. *see* LeCacheux, P.
Peterson, R. B. 3145, 3157
Petit, P. *see* Liégeois, P.
Petračić, A. 1969
Petrini, S. 808
Petterson, H. 3555
Pettersson, B. 2723
Petty, B. K. 2386
Peyronel, B. 2614
Pfalzner, P. M. 2022
Pfeffer, A. 763
—, and Příhoda, A. 1034
Philippis, A. de 2930
Piatti, L. 598, 2170
Piccarolo, G. 1632, 1939
Pienaar, A. J. 696
Pierson, W. M. *see* Holimon, R.
Pijl, L. van der *see* Collier, W. A.
Pillow, M. Y. 1159, 1210, 2038
Pimentell, A. A. Lopes 728
Pinto Lopes, J. 3371
Pisek, A. 2662
Pitkäniemi. T. 3187
Pitt, J. 2537
Place, I. C. M. 65, 185, 250
— *see* Kelly, J. A. B.
Plagnat, F. 2332, 2333
Plaisance, G. 1688, 2286
— and Hirsch, P. 1061
Plank, H. K. 1205, 1476, 3207, 3288
—, and Delgado, R. F. 402, 575
Plath, E. 1290
Platzer, H. B., Sackel, W., and Seifert, H. 1214
Plavšić, M. 2535
Plessis, C. P. du 333
Plouvier, V. 89
Plumb, G. H. 737, 1594, 2360
Pogrebnyak, P. S. 2955
Pohjakallio, O., and Vaartaja, O. 3398
Pöhm, M. *see* Galinovsky, F.
Polanský, B. 2863
Poletika, N. V. 1271
Polivka, J. B. 770
Polunin, N. *et al.* 1002
Pomerleau, R. 735
Pond, T. M. 410
Poole, A. L. 1051
Pope, C. L. 434
Popert, A. H. 2826
Poppoff (Popov), I. D. 3240
Posnette, A. F., Robertson, N. F., and Todd, J. McA. 2364
Post, R. L. *see* Munro, J. A.
Potter, G. J. C. 534
Potts, S. F. 673
—, and Garman, P. 2382
—, Garman, P., Friend, R. B., and Spencer, R. A. 3337
Potzger, J. E. 27, 1006, 2583
Poucques, M. L. de 969
Pourtet, J. 44, 1030, 1917, 2880, 2922
Powell, S. E. 742
Požarliev, G. *see* Minčev, B.
Pracy, L. T., and Kean, R. I. 1584
Prasad, B. N. *see* Narayanamurti, D.
Prasad, J. 1875, 3353
Pratt, E. R. 1045
Pratt, F. F. *see* Coetzee, W. H. K.
Pratt, R. W. 2284
Prebble, M. L. 1616
—, and Fytche, R. F. 1556
Preston, R. D. 360, 2988
—, Hermans, P. H., and Weidlinger, A. 3021
—, and Singh, K. 1162
— *see* Wardrop, A. B.
Preston, R. J. 147
Price, H. R. *see* Campbell, R. A.
Price, J. R. *see* Lahey, F. N.
Příhoda, A. 715, 716, 779
— *see* Pfeffer, A.
Prince, E., and Prince, H. (Revised by Sim, R. L. B.) 3474
Pringle, A. N. 1907
Prioton, J. 3549
Prisyazhnyuk, A. A. 1987, 3436
Pritchard, A. E., and Beer, R. E. 2428
Pritchard, G. J. 1369
Proctor, P. B. *see* Panshin, A. J.
Prodan, M. 817, 818
Proeger, F. 3172
Prothero, R. M. 2547
Pryor, L. D. 1766
Pulle, A. 2727
Puri, G. S. 910, 989, 1720, 1808, 1822, 2648
—, and Gupta, A. C. 2838
Purvis, G. G. *see* Klose, A. A.
Putkisto, K. 415, 2091, 2281
—, and Arnkil, J. E. 669
Putnam, J. A. *see* Lockard, C. R.
Pyatnitski, S. S. 103

Quaite, J. 408, 1971
Quartermain, E. 168, 169
Quentin, L. *see* Stehlé, H.
Radosavljević, S. D., and Dudić, M. M. 649
Raghavan, M. S. *see* Kadambi, K.
Raizada, M. B. *see* Chatterjee, D.
— *see* Chatterji, R. N.
Rakhmanov, S. I. 3106
Ralph, C. S., and White, D. E. 1189
Ralston, R. A. 255
Ram, J. S., and Rao, P. L. N. 1516
Ramakrishnan, K. *see* Ramakrishnan, T. S.
Ramakrishnan, T. S. *see* Marudarajan, D.
—, and Ramakrishnan, K. 2357
Ramanathan, K. 1761
— *see* Sampath, S.
Ramaswami, S. 1526
Ramirez Cantu, D. 1813
Randhawa, M. S. 874
Ranganathan, C. R. 1679
Ranganathan, S. K., Aziz, M. A., Koshi, T., and Sankaran, V. 3046
Ranganathan, V. *see* Narayanamurti, D.
Ranghel Galindo, A. 1744, 2005
Rao, C. V. 125, 2700, 2707
Rao, P. L. N. *see* Karup, P. A.
— *see* Ram, J. S.
Rao, R. R., and Natarajan, S. 1485
Rao, T. A. 2705
Rao, V. S. 1959
Rapraeger, E. F. 3475
Rapraeger, H. A. *see* Matson, E. E.
Rapson, W. P. *see* Nunn, J. R.
Rasmussen, E. F., and McMillen, J. M. 3223
Rausch, H. 3433
Rautvuori, E. 854
Rave 3375
Ravitsky, B. 1105
Rawitscher, W. 2625
Rawlings, G. B., and Wilson, N. M. 1609
Raymond, M. 167
— *see* Rousseau, J.
Raymond-Hamet 3281
Razi, B. A. 951
Read, R. A. 1118, 2839
—, and Walker, L. C. 1731
Reckman, G. 3439
Record, M. E. *see* Hess, R. W.
Redemann, C. T. *see* Haagen-Smit, A. J.
Redmond, J. 1877
Reece, P. O. 1170, 2997
Reeder, J. R., and Cheo, S.-Y. 2802
Reeks, W. A., and Forbes, R. S. 2454
Rees, L. W. *see* Clausen, V. H.
Regel, C. 2733
Reginster, P. 2741
Regnell, S. 2114
Régnier, R. 3434
Rehman, M. A., and Chatterjee, N. C. 1427
—, and Kishen, J. 2219
Reichstein, T. *see* Meyrat, A.
Reinders-Gouwentak, C. A. 362
Reineke, L. H. 1302, 1306
Reinmuth, P. 2116
Rendall, R. E. 2307
Renier, M. 2169
Renkonen, O. 61
Rennerfelt, E. 710, 1572
—, and Thunell, B. 3068
— *see* Edén, J.
— *see* Erdtman, H.

Rennie, P. J. 922, 2640
Reno, J., and Kukachka, B. F. 355, 1148, 2009, 2010
Rettie, J. C. *see* Barraclough, S.
—, and Ineson, F. A. 3560
Reynolds, R. D. 2308
Reynolds, R. R. 1610
Rhodes, F. L. 87
Ricard, R. 3552
Ricciardi, L. G. *see* Othmer, D. F.
Richard, F. 2639, 2871
Richards, C. A. *see* Duncan, C. G.
Richards, D. B. 2052
Richards, P. W. 1797
Richardson, S. A. 572
Richmond, H. A. *see* Graham, K.
Richter, G. A. 535
Richtzenhain, H. 3031, 3034, 3035
Rickett, H. W. 2787
Rieder, P. 849
Riegel, A. *see* Bugbee, R. E.
Rietz, R. C. 592, 1400, 3227
Riker, A. J. 3387, 2680
— *see* Kuntz, J. E.
— *see* Thomas, J. E.
Rimovski, I. I., and Besarić, R. 647
Ringström, E. *see* Björkman, E.
Rinne, V. J. 463
Ripper, W. E., Greenslade, R. M., and Hartley, G. S. 753
Rishbeth, J. 2343
Rischbieth, J. R., Sinclair, R. M., Bussell, K. R., and Gunning, R. H. 1353
Risi, J. 2104
Ritchie, E. *see* Anet, F. A. L.
— *see* Ewing, J.
Ritchie, J. L. 2156
Rittenhouse, R. C. *see* Wise, L. E.
Ritter, G. J. *see* Mitchell, R. L.
Rivals, P. 3338
Roark, C. 2086
Robak, H. 2631
Robbins, P. W. *see* Dils, R. E.
Robbins, W. R. *see* Day, G. M.
Robert, Fr. A. 1859, 1860, 2397
Roberts, E. V. *see* King, D. B.
Roberts, H. D. *see* Gottstein, J. W.
— *see* Wright, G. W.
Roberts, J. *see* Gilden, R. O.
Robertson, N. F. *see* Posnette, A. F.
Robertson, W. A. 83, 634
Robertson, W. M. 2538
Roberty, G. 2786
Robinson, C. T. 523
Robyns, W. 145, 146, 163, 164, 876
—, and Wilczek, R. 2790
Rodary 3538
Rodionov, A. D., and Ol'shanski, M. A. 1119
Rodrigues, J. M. Vianna 1146
Rodwell, C. N. 93
— *see* Groszmann, H. M.
Roe, A. L. 312
—, and Boe, K. N. 1
—, and Squillace, A. E. 254
—, and Stoeckeler, J. H. 2938
Roegner-Aust, S. 2444, 2445
Roewekamp, F. W. *see* Barton, A. J.
Roff. J. W. *see* Eades, H. W.
Rogers, E. F., Koniusky, F. R., Shavel, J., Jr., and Folkers, K. 2238
Rogers, J. S. 1465
— *see* Clarke, I. D.
Rohmeder, E. 2844, 3459
Rol, R. 17, 2829
—, and Venet, J. 2799
Rolando Martín, R. 786
Rollett, E. 1055
Romanov, A. A. *see* Kalashnikov, A. F.
Ronaldson, *see* Chapman, V. J.
Ronkanen, A. J. 499
Roonwal, M. L. 875
—, Bhasin, G. D., and Pant, G. D. 2806
Roosen, P. 3205
Rosay 1687
Rosayro, R. A. de 2600
Rosene, W., Jr. 2949
Rosnick, L. M. *see* Feldman, E. S.
Ross, H. H. *see* Delong, D. M.
Roth, E. R. 405, 3379
— *see* Hepting, G. H.
Roudier, A. 2045
Rouffa, A. S., and Gunckel, J. E. 138
Rouquette, A. *see* Gaussen, H.
Rouschal, E., *see* Huber, B.
Rousseau, J., and Raymond, M. 190
Roussel, L. 958
Rovski, V. M., and Ozolin, G. P. 2671
Rowley, F. B., and LaJoy, M. H. 2174
Roy, L.-A., St.-Amant, L., and Verret, M. 2303
Rubi, J. *see* Holingren, H.
— *see* Patetta, J. J.
Rubner, K. 1662
Rudd Jones, D. 2347
Rudneva, T. I. *see* Nikitin, N. I.
Rudolf, P. O. 1936, 2931
Rüedi, K. 765, 3534
Rule, A. 40
Rummell, R. S. *see* Garrison, G. A.
Rummukainen, U. 2398
Runeberg, L. 3316
Runkel, R. O. H. 1337
Russell, Sir E. J. 1723
Russell, G. F. *see* Mann, J. W.
Russell, J. K. *see* Elgee, H.
Ruxton, J. P. 1811
Ryberg, M. E. 2248
—, and Burney, H. W. 1494
Ryle, G. B. 847, 1705
Rys, L. 515

Saari, E. 2587
Saarnio, J. *see* Sundman, J.
Saatçioğlu, F. 236, 1888, 1916
Sabroe, A. S. 38
Saccardy, 82
Sackel, W. *see* Platzer, H. B.
Šafar, J. 308, 1965
St.-Amant, L. *see* Roy, L.-A.
Sakharov, M. I. 921
Sakornbut, S. S. 2983
Saks, E. V. 462, 1264, 3137
Sakss, K. 2832
Saldarelli, R. 2596
Sallenave, P. 665, 1225, 3323
Salomon, R. 459
Sampath, S., and Ramanathan, K. 115
Samuelson, O. *see* Björkman, E.
Sanderson, M. 1738
Sandmo, J. K. 330
Sandwith, H. Y. 1023
Sankaram, A. 2259
Sankaran, V. *see* Ranganathan, S. K.
Sarlin 176
Sarraillet, J. M. 3237
Sartz, R. S., and Huttinger, W. D. 63
Sarvas, R. 1075, 2698, 2862
Sasin, J., and Knebel, R. 3169
Šatava, J. *see* Peklo, J.
Savchenko, A. I. 278
Savi, L. 316
Saviron, P. 2055
Savory, J. G. *see* Findlay, W. P. K.
Scales, G. M. 477, 478
Scamoni, A. 2492
Scantlesbury, G. 618
Scaramuzzi, F. 2667
Schaack, W. *see* Lieser, T.
Schaeffer, L. 1640, 3545
Schafer, E. R., and Hyttinen, A. 2165
Schanderl, H. 1771
Schedl, K. 2446, 2812
Scheffer, T. C. *see* Pascoe, T. A.
— *see* Verrall, A. F.
Schenck, C. A. 866
Schieldrup Paulsen, H. *see* Godske, C. L.
Schiffino, J. 340
Schimitschek, E. 1599, 2380, 2422
Schindler, U. 2418
Schlitter, E., Heusler, K., and Friedrich, W. 3280
Schmid, E. 2750
Schmidt, E. 348, 1134, 2002, 2971
Schmidt, H. 1202
Schmidt, M., and Kind, H. E. 2442
Schmucker, T. 117
Schneider, E. 555
Schneider-Orelli, O. 3446
Schnell, R. 2749, 2751, 2753, 2783
Schnur, G. L., and Lane, R. D. 2568
Schober, R. 2504
—, and Zycha, H. 3373
Schofield, W. F. 3006
Scholler, H. 1418
Scholten, J. A. 3016
Schopmeyer, C. S. 3296
Schove, D. J. 2501
Schrader, O. H. 2274
Schretzenmayr, M. 2732
Schrevel, M. 2493
Schröck, O. 1764
Schroeder, G. H. 1937
Schubert, G. H. 2328
Schubert, W. J., and Nord, F. F. 380, 3030
Schuder, D. L. 2456
Schuerch, C. 3029
Schulenburg, A. F. v. d. 2692
Schulze, B. 574, 2056
—, and Theden, G. 398, 1365
—, Theden, G., and Starfinger, K. 1372
Schurr-Michel, E. 3268
Schwartz, E. A. 2152
Schwerdtfeger, F. 670, 762, 1538, 2381, 2407, 3432
— *see* Eckstein, K.
Schwerin, G. *see* Foster, D. H.
Scott, B. B. 3267
Scott, F. M. 1776
Scott, M. H. 334, 339, 2976
Sealy, J. R., and Webb, D. A. 1044
Sears, T. W. 1347
Seely, H. E. 829
Seifert, H. *see* Platzer, H. B.
Seifriz, W. 1054
Selberg, A. 1535
Selbo, M. L. 472

Sellke, K. 3422
Semikhnenko, P. G. 2954
Sen, J., and Banerjee, B. K. 1161
Senay, P., and Jovet, P. 191
Senni, L. 9
Serentschy, W. *see* Kisser, J.
Serevo, T. S. 2868
Seshadri, T. *see* Subba Rao, V.
Seshadri, T. R. *see* Narasimhachari, N.
Seth, S. K. 1623, 3489
Sevnik, F. 1681
Sewell, T. G. 1563
Seybold, A. 836
Sgerm, F. 3077
Shafer, T., and Liming, O. N. 1825
Shah, S. V. *see* Nadkarni, M. D.
Shapiro, L. D. 1203
Shapiro, S. 110
Shapovalov, A. A. 2951
Sharp, A. 1787, 1788
Sharp, A. J. *see* Miranda, F.
Shavel, J., Jr. *see* Rogers, E. F.
Shaw, A. C. 1501
Shaw, E. W. 3263, 3469
—, and Staebler, G. R. 2959
Shcherbakov, A. P., and Mishustin, E. N. 2633
Sheard, G. F. 2968
Sheffield, F. M. L. 2464
Shelford, V. E. 578
Shema, B. F. *see* Heuser, E.
Shenefelt, R. D. 3430
—, and Simkover, H. G. 2403
Shepherd, R. F. 3455
Sherrington, C. E. R. 3119
Shingler, G. P. 1492
Shirley, H. L. 863
Shockley, W. *see* Heuser, E.
Shore, B. C. G. 2050
Shterenberg, P. M. 927
Shumakov, V. S. 934
— *see* Zhukov, A. B.
Siddiqui, S. *see* Bhattacharji, S.
— *see* Chakravarti, K. K.
— *see* Chaudry, G. R.
Sierla, V. O. 14
Sievers, A. F. *see* Clarke, I. D.
Siggers, P. V. 1826
Silina, A. A. *see* Ivanov, L. A.
Silva, J. 3291
Silván, L. 2280
Silversides, C. R. 855, 1685, 3326
Silvy-Leligois, P. 2865
Sim, R. L. B. *see* Prince, E.
Simeunović, D. S. 3542
Siminovitch, D., and Briggs, D. R. 947
— *see* Briggs, D. R.
Simkover, H. G. *see* Shenefelt, R. D.
Simmonds, F. J. 702
Simmonds, N. W. 3358
Simmons, F. C. 407, 1213, 3069
Simon, G. 2261
Simonian, V. H. *see* Youngken, H. W.
Sims, I. H. *see* Dorman, K. W.
Sinclair, R. M. *see* Rischbieth, J. R.
Singh, C. 2168
Singh, D. P. 2911
Singh, J. *see* Narayanamurti, D.
Singh, K. 376
— *see* Preston, R. D.
Sipkes, C. 1958
Sirén G. 1074
Sisam, J. W. B. *see* Whyte, R. O.
Sisley, C. 401, 3059
Sitaraman, N. L. *see* Aziz, M. A.
Sitch, D. A., and Marshall, H. B. 3183
Skerman, P. J. 73
Sklyarenko, T. F. 265
Skoglund, C. 3171
Škorić, V. 734
Skvortsov, A. K. 2676
Šlander, J. 2405, 2908
Slankis, V. 109
Slooten, D. F. van 1833
Smit, B. 1606
Smith, A. C. 1017, 2791
Smith, B. A., and Dollear, F. G. 1510
Smith, C. B. *see* Norris, C. B.
Smith, C. C. 1612
Smith, D. M. *see* Paul, B. H.
Smith, D. S. 483, 484
Smith, E. M., and Dickinson, F. E. 2024
Smith, G.-H. 3567
Smith, H. H. 2205
Smith, J. T. 3109
Smith, L. G. 1173
Smith, R. H. 2824
Smith, W. R. *see* Hertzler, R. A.
Smith, W. T. 1354
Smithers, L. A. 810
—, and Summers, J. W. 8
Smolák, J. 1581
Smyth, H. A. *see* Dodge, C.
Snell, W. H. 2356
Snijders, J. J. *see* Gonggrijp, J. W.
Snow, E. A., and Bailey, L. F. 1469
Snyder, T. E. 1380
Sobrinho, V. 1818
Soest, J. van 19, 914, 1680, 2482
Somes, H. A., and Moorhead, G. R. 2309
Soom, E. 2885, 3537
Soretz, S. 2029
Sorsa, B. 474
Sosa, A. 3047
Sosa-Bourdouil, C. 1745
Soukup, J. *see* Kroulík, A.
Soumini, C. K. *see* Marudrajan, D.
Sousa, A de. F. Gomes e 43
Southam, C. M., and Ehrlich, J. 1197
Southwick, L. 695
Špalek, V. *see* Vincent, G.
Specht, R. L., and Perry, R. A. 1821
Speese, B. M. *see* Baldwin, J. T., Jr.
Spencer, R. A. *see* Potts, S. F.
Spoon, W. 2006
Sproull, R. C. *see* Kenaga, D. L.
Spurr, A. R. 126, 972
Spurway, B. J. C. 1088
Squillace, A. E. *see* Roe, A. L.
—, and Adams, L. 253
Sreenivasaya, M. *see* Govindarajan, V. S.
Stacey, W. A. 587, 2197
Stademann, R., and Mirimanoff, A. 1746
Staebler, G. R. *see* Shaw, E. W.
Stamm, A. J. 3116
Stamm, E. P. 3327
Standley, P. C., and Steyermark, J. A. 148
Starčević, J. 492
Starfinger, K. *see* Schulze, B.
Stark, J. B. *see* Klose, A. A.
Stearns, F. 1005
Stennis, C. G. G. J. van 1847
Steer, H. B. 558
Stehlé, H., Stehlé, M., and Quentin, L. 149
Steigerwaldt, E. F. 2593
Steiner, D. 3048
Steiner, G. 785
Steiner, M. 64
Steininger, A. *see* Kisser, J.
Stephen, A. M. 1467
Stern, E. G. 1429, 3317
—, and Blake, O. J. 629
Stern, W. L., and Buell, M. F. 2759
Sternberg, H. O'R. 1740
Sternitzke, H. S., and Duerr, W. A. 1786
Sterrett, E. 3214
Steudel, W. 2449
Stevens, W. C. 593, 2025
—, and Turner, N. 457, 2113
Stewart, A. M. 1215
Steyermark, J. A. *see* Standley, P. C.
Steyn, D. G. 657
Stillinger, J. R. *see* Hoyle, R. J.
Stocker, O. 2242
Stoeckeler, J. H. 1947, 1985, 2910
—, and Heinselman, M. L. 3363
—, and Limstrom, G. A. 2875
— *see* Roe, E. I.
Stoffels, A. 1625, 3483
Stone, E. C., and Duffield, J. W. 120
Stothard, F. S. 3249
Stover, W. S. 426
Strand, L. *see* Andersson, E.
Streyffert, T. 1642
Strickland, L. F. *see* Gambrell, F. L.
Stubbs, D. A. 3522
Stubbs, J. *see* Brian, P. W.
Stumpf, W., and Freudenberg, K. 3033
Subba Rao, V., and Seshadri, T. 92
Suber, E. 2853
Suchet-d'Albufera, L. 3265
Sudiro, M. 1527
Suffert-Burner, F. 1310
Suggitt, J. W. *see* Chisholm, T. H.
Sugiwara, M. 503
Šulc, J. 16
Sullivan, C. R., and Green, G. W. 1037
Sulzlée, C. 2287-8
Summers, J. W. *see* Smithers, L. A.
Sundararaj, D. D. *see* Chandrasekharan, S. N.
Sundman, J. 2042
—, Saarnio, J., and Gustafsson, C. 388, 3018
— *see* Gustafsson, C.
Susmel, L. 1313, 1411, 2068, 2148, 2856
Sutherland, M. 1110
Sutherland, M. D. *see* Davenport, J. B.
Švec, J. 848
Svedberg, T. 384
Svoboda, G. H., and Parks, L. M. 1507
Svoboda, P. 158
Švolkovskis, A. 3465
Swabey, C. 47, 2071
Swamy, B. G. L. 139, 2699
— *see* Money, L. L.
Sweetman, H. L. 3061
Swift, E. F. 2375
Swingle, R. U., and Bretz, T. W. 1758, 2365

Szawłowski, K. 1239
Szczotka, S. 2575
Szymkiewicz, D. 894

Tackle, D. *see* Cosens, R. D.
Takahashi, K. 1807
Tallarico, G. 1518
Tallon, G. *see* Molinier, R.
Tal'man, P. N. 1608
Tamblyn, N. 2123
—, and Gordon, A. 1385
Tamesis, F. 1675
Tamm, O. 1726, 2653
Tamolang, F. 2340
Tandan, K. N. *see* Chowdhury, K. A.
Taniguchi, S. 256
Tapia, E. A. 775
Tarjan, A. C. 2457, 3468
Tarrant, R. F. 52, 2528, 2607
Taylor, J. E. 852
Taylor, K. L. 3057
Taylor, R. F., and Godman, R. M. 1629
Taylor, W. I. *see* Briggs, L. H.
Technau, G. 2192, 2194
Teesdale, L. *see* Holdridge, L. R.
Telford, C. J. 488
Tesdorff, H. 1819
Teuscher, H. 2668
Thalenhorst, W. 2383, 2409
Thaureaux, J. *see* Fauré-Fremiet, E.
Theden, G. *see* Schulze, B.
Thimann, K. V. *see* Torrey, J. G.
Thirumalachar, M. J. 732
—, and Pavgi, M. S. 3408
Thom, C. 929
Thomas, A. J. *see* Langlands, I.
Thomas, A. V. 1135, 1341
—, and Browne, F. G. 3219
Thomas, G. P. 2348
Thomas, J. E., and Riker, A. J. 2669
Thomas, M. D., Hendricks, R. H., and Hill, G. R. 942
Thomas, R. 1000
Thomas, W. C. *see* Brown, R. D.
— *see* Lahey, F. N.
Thomas, W. D. 1575
Thompson, B. 3098
Thompson, G. E. *see* Campbell, W. A.
Thompson, H. N. 2577
Thompson, P. A. 687, 688
Thomsen, M., Buchwald, N. F., and Hauberg, P. 1607
Thomson, A. P. 1636, 2772
Thomson, C. C. 274, 306, 1059
Thomson, G. W., and McComb, A. L. 1727
Thornton-Jones, G. 443
Thulin, I. 1539
Thunnel, B. *see* Rennerfelt, E.
Thuraisingham, K. *see* Turbet, C. R.
Thurmann-Nielsen, E. 1345
Thurston, A. P. 3150
Tichý, A. 831
Tikka, P. S. 2852
Tiller, F. M. *see* Garber, H. J.
Timell, T. 3020
Tinbergen, L. 2389
Tincker, M. A. H. 359
Tinto, J. C. 2026
Tirén, L. 2861
Tirrell, G. E. 674
Tisdale, E. W. 3568
Tisserant, C. 1028
Todd, J. McA. *see* Posnette, A. F.
Toit, R. du 1562
Tolle, S. W. 3164
Tomašegović, Z. 2522
Tondeur, R. *see* Engel, B. G.
Tong, M. P. 3126
Toole, A. W. 2595
—, and Danielson, C. W. 1272
Toole, E. R. 2358
— *see* Hepting, G. E.
Topçuoğlu, A. 2228, 2252, 2253
Torgeson, O. W. 3226
Torrey, J. G., and Thimann, K. V. 3364
Torricelli, D. E., and Muñoz, V. D. 276
Tortorelli, L. A. 516
Towers, W. K. 619
Tripp, H. A. 2455
Troll, W. 128
Tromp, P. H. M. 1918, 3535
Troop, B. A., and Wangaard, F. F. 2127
Trorey, L. G. 830
Troupin, G. 2785
— *see* Boutique, R.
— *see* Léonard, J.
Trousdell, K. B. 267, 2860
Truax, T. R. 590
Tryon, H. H., and Finn, R. F. 258
Tschermak, L. 219, 2714
Tsel'niker, Yu. L. *see* Ivanov, L. A.
Tullis, E. C., and Davis, W. C. 699
Tuovinen, A. 419, 420, 2092, 2093, 2094
—, and Leskinen, S. 2077
Turbet, C. R., and Thuraisingham, K. 1524
Turc, L. 1872
Turček, F. 745, 1585, 2390, 3414
Türkes, V. 2233
Turnbull, R. F. 1143, 3163
—, and Colwell, S. J. 486, 1301, 2138
Turner, H. D., and Kern, J. D. 3191
Turner, K. B. *see* Wellington, W. G.
Turner, N. 580
—, and Woodruff, N. 2385
— *see* Stevens, W. C.
Twerdal, M. P. *see* Worthington, N. P.
Tyszkiewicz, S. 1085, 2879

Ugarte Laiseca, J. 925
Ugrenović, A. 2962
Underwood, G. R. *see* Balch, R. E.
Uoda, H., Fukushima, B., and Kondô, T. 3028
Urbanovski, A. 3502
Ure, J. 1073
Ursprung, A., and Blum, G. 2656
Uyemura, T. 2220
Uziello, A. 955, 3519

Vaartaja, O. 54
— *see* Pohjakallio, O.
Vahid, S. A. 1713
Valliere, G. 3477
Valtasaari, M. 662
Van Akkeren, J. J. *see* Hornibrook, E. M.
Vanselow, K. 1070, 1901
Varossieau, W. W. 393, 1145
Vasić, K. 3458
Vasiljenić, S. 2991
Vaughan, J. A. 560
Vay, F. *see* Holingren, H.
— *see* Patetta, J. J.
Veiga, A. de Arruda 1095
Velázquez, C. A. 3310
Veldsman, D. P. 1477
Vellozo, L. G. de Castro 3208
Veloso, H. P. 173
Venet, J. 2097
—, and Noisette, A. 37
— *see* Rol. R.
Verdcourt, B. 1843
Verduyn Lunel, F. A. *see* Hildebrand, F. H.
Verghese, J. 2250
Vergnano, O. 2993
Vermillion, M. T. 3405
Verona, O. 1417
Verrall, A. F. 3325
—, and Mook, P. V. 1377
—, and Scheffer, T. C. 570
Verret, M. *see* Roy, L.-A.
Verzilov, V. F. 1097
Vesterinen, E. 1677
Vicioso, C. 194
Vignaux, du 2827
Villar, E.-H. del 2771
Villegas de la Vega, R. 1915
Villière, A. 601, 1339
Villière, M. 332
Villikka, P. 3104
Vincent, B. 839
Vincent, G. 270
—, and Špalek, V. 953
Vink, A. P. A., and Nispen tot Pannerden, J. E. M. van 3525
Viro, P. J. 2628
Virot, R. 202
Visher, S. S. 2757
Vité, J. P. 2378
Vloten, H. van 124, 181, 964
Voegeli, H. 2720
Voelskow, P. 2172
Vogel, F. H. 2125
Vogel, W. 1596
Voinov, V. V. 234
Voropanov, P. V. 99
Vorreiter, L. 448, 449
Vöry, J. 860, 2073
Voûte, A. D. 3438
— *see* Elton, E. T. G.

Wacek, A. von 377
Wadsworth, F. H. 1655
Wagener, W. W. 2355
Waggoner, D. W. 2367
Wagner, J. B. 1261
Wahl, Y. 1491
Wahlenberg, W. G. 1897, 2937, 2961
—, and Doolittle, W. T. 328
Waisman, I. 107
Walden, E. 510
Walker, A. 2003
Walker, E. S. 2088
Walker, L. C. *see* Read, R. A.
Walker, R. I. 974
Wallihan, E. F. 277
Walmari, Z. 633
Walter, H. 97, 159
Walters, C. S. 2180
—, and Kulp, D. A. 613, 2196
—, Kulp, D. A., and Fox, H. W. 3084
Walters, S. 1366, 3259
Wang, F. H. 973
Wang, T. H. *see* Haagen-Smit, A. J.

Wangaard, F. F. 377, 2031
— *see* Chudnoff, M.
— *see* Hess, R. W.
— *see* Troop, B. S.
Wardrop, A. B., and Dadswell, H. E. 3066
—, and Preston, R. D. 2986
— *see* Hodge, A. J.
Wareing, P. F. 956, 2837
Warrack, G., and Joergensen, C. 811
Warren, H. V., and Delavault, R. E. 1194
Waterman, A. M., and Cash, E. K. 1580
Waters, W. T. *see* Hummel, F. C.
Watson, J. G. 909
Watt, A. B. *see* Corey, W. S.
Watt, R. B. *see* Corey, W. S.
Watt, R. F. 821
Wauthoz, V, 1708
Way, A. M. *see* Brian, P. W.
Wayman, P. 1361
Weatherby, H. 2458
Weaver, H. 3354
Weaver, N. 752
Webb, B. E. 2087
Webb, D. A. *see* Sealy, J. R.
Webb, L. J. 2234, 3275
Webb, W. *see* Kinghorn, J. M.
Webb, W. E. *see* Graham, K.
Weber, G. F. *see* Birchfield, W.
Webley, D. M. *see* Eastwood, D. J.
Wechel, A. te. 2963
Weck, H. 223
Weck, J. 2498
Weckman, M. B. 481
Weidinger, A. *see* Preston, R. D.
Weitz, S. 1086
Weller, G. W. 1251
Wellington, W. G. 1850
—, Turner, K. B., and Belyea, R. M. 3467
Wells, J. S. 291, 2673
Wendorff, B. 2956
Wenger, K. F. 717
Went, J. C. 1849, 2359
Wenzl, H. 2295
West, O. 2257
West, T. F., and Campbell, G. A. 3420
West, W. I. 341
Westberg, D. L. 2354
Westcott, J. C., and Cleary, V. P. 3352
Wester, H. V., Davidson, R. W., and Fowler, M. E. 3381
—, and Marth, P. C. 1053
Westveld, R. H. 1946
Wettstein, W. von 1762, 1765, 1768, 2843
Whaley, W. M. *see* Adams, R.
Whalley, B. E. 957
— *see* Bannan, M. W.
White, C. T. 2800
White, D. E. *see* Ralph, C. S.
White, D. P. 2824
— *see* Heiberg, S. O.
— *see* Wilde, S. A.
White, F. 2754
White, H. G. 886
White, J. W. 1250
Whitford, P. B. 3492
Whittaker, J. E. 3101
Whyte, R. O., and Sisam, J. W. B. 297
Wibstad, K. 331
Wicht, C. L. 1684
Wiedemann, E. 1634, 3508
Wierzbicki, J. 1438
Wilcomb, H. *see* Barton, A. J.
Wilczek, R. *see* Robyns, W.
Wild, H. *see* Collins, W. F.
Wilde, S. A., Wilson, F. G., and White, D. P. 66
—, Youngberg, C. T., and Hovind, J. H. 2298
Wilhelmi, T. 2465, 2506
Wilkins, W. B. 1258
Williams, A. B. 170
Williams, A. M., Jr. 2534
Williams, E. J. C. *see* Fordham, J. H.
Williams, J. R. 701
Williams, R. O. 295
Willis, J. *see* Penfold, A. R.
Wilson, F. G. *see* Wilde, S. A.
Wilson, N. M. *see* Rawlings, G. B.
Wilson, R. C. 3523
Wilson, S. E. 1315
Wimbush, S. H. 1141
Wind, E. J. 1691
Winters, H. F. 292
Winters, R. K. *see* King, D. B.
Wirka, R. M. *see* Crawford, F. S.
Wise, L. E. *see* Lewis, H. F.
—, and Rittenhouse, R. C. 389
Wise, S. A. 2099, 3261
Wit, H. C. D. de 1832
Witkus, E. R. *see* Berger, C. A.
Wittich, W. 1703, 1732
Wittkopf, J. J., and MacDonald, M. D. 367, 368
Włoczwski, T. 1062
Wobst, A. 2526
Wohletz, L. R. 3122
Wokes, F., and Melville, R. 3282
Wolcott, G. N. 3060
Wolryche-Whitmore, G. C. 325, 3415
Wood, J. G. *see* Crocker, R. L.
Wood, L. W. 3262
Wood, R. F. 963, 2826
Woodford, A. J. 2824
Woodford, E. K. 2323
—, and Ivens, G. W. p. 139
Woodruff, N. *see* Turner, N.
Woods, J. B. 691
Woods, R. P. 1433
Worthington, N. P., and Twerdal, M. P. 3490
Wraber, M. 2334, 2730
Wright, G. F. *see* Bell, A.
Wright, G. W. 2137
—, and Roberts, H. D. 1312
Wright, J. M. *see* Brian, P. W.
Wright, W. G. 1554, 1555, 2316
Wu, C. C., and Li, L. Y. 3305
Wulf, H. 1352
Wurgler, W. 697, 698
Wyatt-Smith, J. 1649
Wylie, R. B. 1782
Wyman, D. 3365
Wyss, O. 548

Yablokova, V. A., and Yakimov, P. A. 2230
Yakimov, P. A. *see* Yablokova, V. A.
Yakovlev, F. S. 1804
Yakovlev, M. I. 233
Yakamori, N. *see* Tachi, I.
Yang, N. C. *see* Li, L. Y.
Yang, S. L. *see* Li, C. S.
Yashiroda, K. 1098
Yatagai, M., and Kosaki, T. 878
Yates, F. 2484
Yavorsky, J. M. 3156
Yeager, L. E. 1543
Yen, P. C., and Hsu, W. C. 2609
Yen-Tcheng, T. 2737
Young, D. W. *see* Young, V. A.
Young, H. E. 429, 708, 709, 733, 1201, 2627
Young, R. A. *see* Milbrath, J. A.
Young, V. A., Fisher, C. E., Darrow, R. A., McCully, W. G., and Young, D. W. 3362
Youngberg, C. T. *see* Wilde, S. A.
Youngken, H. W., and Simonian, V. H. 2710
Youngquist, W. G., and Munthe, B. P. 371
Yrjö-Koskinen, Y. O. T. 3105
Yu, C. H. 1150
Yuncker, T. G. 1794
Yunodidov, A. P. 2665
Yurkevich, I. D. 2675

Zabka, J. 676
Zach, L. W. 172
Žagar, B. 2304
Zahari, M. 987
Zaitseva, A. F. *see* Nikitin, N. I.
Zappe, M. P. 1904
Zappert, K. 1324
Zarubin, A. F. 105, 106, 2674
Zehngraff, P. J. 1706
Zelenskaya, E. D. 1992
Zenczak, P. 2209
— *see* Grondal, B. L.
Zeuner, F. E. 1692
Zheltikova, T. A. 2917
Zhukov, A. B., Godnev, E. D., and Shumakov, V. S. 2952
Zieger, E. 759
Zierau, E. 3108
Zillgitt, W. M. 259, 1903
— *see* Eyre, F. H.
Zimmerle, H. 2505
Zimmern, A. 582
Živojinović, S. 2404, 3441
Zobrist, L. 3403
Zoller, H. *see* Lüdi, W.
Zubović, J. 2591
Zukowski, A. A. 318
Zumbrunnen, F. 1351
Zycha, H. 3067, 3378
— *see* Schober, R.

SPECIES INDEX

Abies spp. 101, 1011, 2773, 2847
A. alba: decline in Switzerland 3496; disease 2345; frost injury 676; general account **343**; in Serbia 2718; insects 765, 1600, 3441; management in Franche-Comté 1872; mistletoe 2332–4; physiological maturity 1920; prehistory 1694; regeneration 2856; root—(competition) 765, (respiration) 2661; seed storage 270; tanbark **2229**; volume tables 2470–1; **wood:** charcoal **1411**; decay **1198**; nitration products **1178**
A. amabilis 711, 1601, 2572
A. balsamea: direct sowing 264; response to release 1976; silvicultural control of budworm 766; succession 1001; tanbark **1465**; windthrow 248; **wood:** reduction of weight by post-felling treatment **409**; sapwood determination **1232**; yield 2509
A. cephalonica 1103
A. cilicica 988
A. concolor **1165**, **2990**
A. faxoniana 1047
A. firma **2220**
A. georgei **1150**
A. grandis 1560, 1922
A. lasiocarpa 820, **2215**, 2490, 2857, **3050**
A. nobilis see *A. procera*
A. nordmanniana 819, 2345, 2832
A. pindrow (*A. webbiana*) 989, **2219**
A. pinsapo 1874
A. procera 1877, **2990**
A. rolii sp. nov. 183
A. sachalinensis 256, **654**, **2220**
A. sibirica 2345
A. webbiana see *A. pindrow*
A. yuana sp. nov. 183
Abietineae 978–81–2708
Acacia 151
A. spp. 238, 1749
A. albida **2257**
A. aneura **347**, **2258**
A. arabica 2849, **3266**
A. auriculiformis 1899
A. catechu 1623
A. dealbata **3265**
A. decurrens **3236**, **3265**, 3402
A. decurrens var. *mollissima* (*A. mollissima*): plantations **3265**; regeneration 261, 1881; research **635**; tannin—(constituents) **1467**, (content) **2231**; yield tables **3265**
A. falcata 1899
A. giraffae **2257**
A. greggii 171
A. gummifera 1874
A. leucophloea 732, **1527**
A. mollissima see *A. decurrens* var. *mollissima*
A. raddiana 1874
A. senegal 2900, **3307**
A. seyal 1874
A. stenocarpa 2849
A. tortilis 2849
A. woodii **2257**
Acanthorhiza mocinni **3291**
Acer 101, 135, **2991**
A. spp.: afforestation of Karst 1968; charcoal **1411**; frost injury 676; poisoning for bark removal **3082**; seed storage 270; squirrel damage 2367–8; tabular key **1148**; tanbark **1465**
A. campestre 927, 2344, **2991**
A. heldreichii 2717, **2991**
A. lobelii 1834, 2780
A. macrophyllum **2115**
A. monspessulanum **2991**
A. negundo 777, 1986
A. obtusatum **2991**
A. platanoides: cambial activity 1752; leaf morphology 1782; mixture with Ash 320; natural regeneration 1986, p. 134; root respiration 2661; transpiration 1748; wildings 2951; wood anatomy **2991**
A. pseudoplatanus: afforestation of strip-mined land 2924; galls 1851; increment 956, 2507–8; leaves, P-content of 64; mixture with Larch 1873; mycorrhiza 927; virus diseases 1581; **wood:** anatomy **2991**; bungs **1262**; veneer p. 399
A. rubrum 67, 264, **2293**
A. saccharinum 1543, 1778, 1962
A. saccharum: dendrochronology 2499; ecology 1002; natural regeneration 264; root growth 2845; shoe lasts **3254**; soil requirements 67; volume tables 802; wound dressings 324
A. tataricum 1986, 2951, **2991**
Aceraceae 89
Acmena floribunda 1123
Acokanthera venenata **1477**
Acrodiclidium salicifolium 1928
Acronychia baueri **645**
Actinodaphne hookeri **2254**
Adansonia digitata **1483**
Adenostoma fasciculatum 2319
Adina cordifolia **2061**
Adinandra spp. 2803
A. intermedia 2803
Aeglopsis chevalieri 2697
A. eggelingii 2697
Aesculus spp. **1148**
A. hippocastanum 2575
Aëtoxylon see *Gonystylus*
Afrormosia sp. 621, **1433**
A. elata **1133**, 2933
Afzelia sp. **348**
A. africana **2049**
A. bipindensis **2112**
Agathis australis **1133**, **1174**, 2855
A. loranthifolia 3509
A. palmerstoni 708, 815
A. robusta **1174**
A. vitiensis **1174**
Aglaia diffusa 2868
Ailanthus altissima (*glandulosa*) 227, p. 134
Alangium tonkinense 2778
Albizzia acle **2970**
A. coriaria **2049**
Albizzia falcata **461**, **3236**
A. fastigiata 1876
A. ferruginea **3131**
A. julibrissin 971, 2358
A. lebbek **1133**, 2835
A. lophantha 1123
A. moluccana **1341**
A. odoratissima 1876
A. zygia **2049**
Aleurites cordata 235
A. fordii 235
A. moluccana **461**
Alnus 969
A. spp.: fodder value **2256**; frost injury 676; hedges 2947; mixture with Poplar 1967; pulping p. 400; seed storage 270
A. cordata 2829
A. crispa 1729
A. glutinosa: induced polyploidy 970; mixture with Oak 1969; root respiration 2661; staining wood in the living tree **557**; yield table 1634
A. incana 2324, 2621, 2918, 3363
A. rubra **1269**, **2115**, **3235**, 3487
A. viridis 998
Alstonia sp. **461**
A. boonei (*congensis*) **2185**
Altingia excelsa 220
Amelanchier spp. 198
A. laevis 2621
A. laevis f. *villosa* f. nov. 198
Amherstia spp. 1027
Amorpha fruticosa 927
Anacardium occidentale **1284**
Andira coriacea **2972**
Aniba sp. **2005**
Aningueria altissima **2049**
Anisoptera laevis 1925
Annonaceae 1019, 2782
Anogeissus latifolia 2838
Anthocephalus cadamba **461**
Antiaris africana **1401**
Antrocaryon micraster **379**
Antrophora gen. nov. 192
Aquifoliaceae 2727
Araucaria spp. 174, 2339, 2396
A. angustifolia **515**, **1133**, **1324–5**, **3208**
A. araucana 1819, **2000**, 2932
A. bidwillii 815
A. cookii 3338
A. cunninghamii: disease 709; increment 815; seed treatment 2890; **wood:** blue-stain **429**, **1201**; paintability **1353**
Arbutus andrachnoides **2993**
A. menziesii 2328, 2475
A. unedo 1044, **1411**, 1906, **3047**
Archytea 203
Arctostaphylos sp. 3359
Areca catechu **550**
Argania spinosa 1874
Argyrodendron peralatum **3015**, 3528
Artemisia 2709
A. absinthium 693
A. scoparia **1512**
Artocarpus integrifolius **2970**
Arundinaria alpina 1737

Arundinaria amabilis **3314**
Astronium graveolens **337**
Atriplex 1836
Aucoumea klaineana 720, **1279**, 2869
Avicennia alba 2651
Azadirachta indica see *Melia azadirachta*

Backhousia spp. **1504**
Baeckia spp. **1504–5**
Bagassa guianensis **337**
Baikiaea plurijuga **571**
Balanites aegyptiaca 2849, **3306**
Balfourodendron riedelianum **347**
Bambusa arundinacea 954, **1162**, **1525**
B. longispiculata 1893
B. polymorpha 954
B. textilis **3207**
B. tulda 954, **1525**, 1893, **3207**
B. tuldoides **1525**, 1893, **3207**
B. vulgaris: insects **3207**; preservative treatment **575**, **1525**; pulp **2169**; shelterbelts in New Zealand 1123; strength **1525**
Bambuseae 108, 1561, 3408
Barringtonia rhodochlamys sp. nov. 1018
Bassia spp. 732
Bauhinia retusa **2020**, 2838
Beilschmiedia spp. 2790
B. bancroftii 2846
B. tawa **2190**
Berberis aristata **3278**
Berlinia spp. **1132**
Bersama 1843
Betula spp.: artificial light, effect on seedlings 288; chemical control 2324; logging **415**; poisoning for bark removal **3082**; pulping **2163**; scaling tables 796; seed storage 270; soil micro-organisms under 931; tannin content of bark **1465**; woodwasps 1608
B. alba s.l.: disease 2345; fodder value **2256**; forest crop in England 1964; insects 2398; leaves, chemical analysis of 2628; oil **1508**; regeneration in Finland 1075; soil under 2636; transpiration 1748; vegetative propagation 2672; volume tables 3486; **wood:** bungs **1262**; chemistry **2042**; pulp **1339**, **3184**; yield tables 1634; see also *B. pubescens*, *B. verrucosa*
B. lenta 926, **1148**
B. lutea 264, **464**, **1148**, **1183**, 1621
B. michauxii 189–91
B. nigra 1543
B. papyrifera **409**, **2115**, **3182–3**
B. pubescens: chemical constituents of—(foliage) 2626, (pollen) 90–1, (wood) **3025**; disease 1827; distribution in Serbia 2718; mycorrhiza 927; regeneration in Finland 1075
B. verrucosa: chemical constituents of—(bark) **2232**, (leaves) 2626, (wood) **388**, **3025**; chemical control 1560; mixtures 1957; mycorrhiza 927; regeneration in Finland 1075; respiration 2659, 2661; sap 95, 2657; wood anatomy **358**
Blepharocarya involucrigera 3528
Bombax malabaricum 1021, **1280**, **2061**, 2525, 3413
Borassus spp. 990
B. aethiopium 1040
Boronia spp. **1504**
Boswellia sp. **3292**
B. serrata p. 400, **1344**, 1569
Bowdichia virgilioides 279
Brachystegia boehmii **346**, **1401**
B. spiciformis **346**
Broussonetia papyrifera **2168**
Bruguiera gymnorrhiza **1** 71
Buchenavia capitata **337**
Burseraceae 2727, 2785
Butea monosperma (= *B. frondosa*) **1527**
B. superba 92
Butyrospermum parkii **2049**
Buxus spp. 785, 2457, 3444
B. sempervirens **3280**, 3468
Byrsonima spicata 1928

Calamus spp. **1526**
Calliandra tweedii 977
Callistemon spp. **1505**
Callitris spp. 1749
C. articulata 1874
C. glauca **375**, **545**, 815, **1353**
Calluna vulgaris 1560, 2630–2, 2722
Calocarpum mammosum **1511**
Calophyllum spp. **1135**
C. antillanum 1891
C. inophyllum 3338
C. tomentosum **2969**
Campnosperma spp. **461**, **1135**
Canarium album 2893
C. pimela 2893
C. schweinfurthii **2049**
Caragana arborescens 233, 743, 927, 1748, 2951
Carapa guianensis **2010**
C. moluccensis **1471**
C. obovata **1471**
Careya arborea 2838
Carpinus betulus: frost resistance 676; insect 781; mixture with Oak 260; root respiration 2661; seed storage 270; **wood:** charcoal **1411**; lasts **1433**; pulp **1339**
C. orientalis 1824
Carya spp. **1148**, **1153**, 1841, **3016**, **3224**
C. cordiformis 67
C. glabra **528**, 926, 2499
C. illinoensis 1543
C. ovata 2499
C. tomentosa **528**
Caryocar villosum **347**
Casearia tomentosa 2838
Cassia alata 944
C. fistula 2838
C. reticulata **3287**
C. siamea 2901
Castanea spp. 123, 729, 1048
C. crenata 122–3, 180, 725, 2345
C. dentata **355**
C. javanica **3237**
C. mollissima 1049, 3387
C. sativa: cambial activity 1900; charcoal **1411**; diseases 723–8, 2345, 3383, (distribution) 2350, 3384, (resistant strains) 725, 3385, (symptoms) 723; floral biology 104; hybrids 122; mixture with Beech and Oak 2637; silvicultural requirements 232
Castanospermum australe 176
Casuarina spp. 2699, **3236**
C. equisetifolia: damping off 2340; disease 721; dune fixation 2599; on alkaline soils 302; sex 949; vegetative propagation 1755
C. luehmanni 73
C. sumatrana 1088
Catalpa bignonioides 1778, 2784
C. ovata 2784
C. speciosa 2784, **3044**
Cavanillesia platanifolia **2048**
Ceanothus crassifolius 2319
C. velutinus 3359
Cedrela tonduzii **337**
C. toona **1280**, **1382**, **2061**, 3528
Cedrus atlantica 1103, 1105, 1874, 1955, 2345
C. deodara 989, **1382**, **2219**
C. libani (*libanotica*) 988, **2977**, 3470
Ceiba guineensis var. *clausa* **1521**
C. pentandra **2259**, 2364
Celastraceae 89
Celtis australis 2363
C. durandii **2049**
C. kraussiana **2049**
C. laevigata **1148**, 1543
C. luzonica 2868
C. occidentalis **1148**
C. soyauxii **2049**, **2969**
C. zenkeri **2039**, **2049**
Cephalanthus occidentalis 1543
Ceratonia siliqua **647**
Cercidiphyllum japonicum 180, **369**, **3028**
Cercis canadensis 3381
Cercocarpus 199
Ceriops roxburghiana **1471**
Chamaecyparis **1151–2**
Chamaecyparis spp. 713, 1595
C. (*Cupressus*) *lawsoniana:* direct sowing 273; disease 2346; in New Zealand 1123; mixtures 1110; resistant to 2,4-D 1560; silvicultural characters 2841; **wood:** battery separators **2219**
C. obtusa **2220**
C. thyoides 2822
Chamaerops sp. **636**
Chikrassia tabularis **1133**, **2020**
Chiranthodendron pentadactylon **2011**
Chlorophora excelsa: wood properties and uses **571**, **1191–3**, **1433**, **2216**
Chorisia insignis **347**
Chrysophyllum spp. 2933
C. pauciflorum **2062**
Chusquea abietifolia 1054
Cinchona ledgeriana 2689
Cinnamomum camphora 231, 3338
Cistanthera papaverifera **2971**
Citharexylum fruticosum **2062**
Cleistanthus collinus 2943
Cola chlamydantha 2364
C. cordifolia 2364
Coldenia palmeri 171
Colutea arborescens 1101
Combretaceae 2786
Combretodendron africanum **1133**
Combretum 1837–8
Commersonia bartramia 2868
Conocarpus erectus **1464**
Copaifera spp. 2795
C. baumiana 165, 1027
C. coleosperma 165
C. mildbraedii 1027
C. religiosa **2981**

Cordia 192
C. alliodora **337, 1175**
C. macrostachya 700–2
Cordyla richardii **2049**
Cornus 2787
C. florida 1053, **2009**, 2297
Corylus avellana 1034, **1262**, 1822, **3249**
Couma sapida p. 558
Coumarouna spp. **3310**
Crataegus spp. 3444
C. ambigua 94
C. monogyna 1986
C. oxyacantha **647**
C. pubescens **3312**
C. sanguinea 94
Cratoxylon spp. **1135**
Crescentia cujete **1510**
Cryptomeria japonica **369**, 1560, 1755, **2061**, 3338
Cryptosepalum pseudotaxus 165
Cunninghamia lanceolata 2854
Cupressaceae 132, 2580
Cupressocyparis 1092
Cupressus spp. 1749, 2773
C. arizonica 1103, 1878, 1955, 2347
C. benthami see *C. lusitanica* var. *benthami*
C. horizontalis 1086
C. lawsoniana see *Chamaecyparis lawsoniana*
C. lusitanica 2347
C. lusitanica var. *benthami* 1123, 2347
C. macrocarpa 714, 1737, 2347, **3195**
C. sempervirens: afforestation of calcareous rocks 1955; disease 2347; ecology 987; insects 987; morphology of seedlings 1779; shelterbelts 1984; silviculture 1105, 1874
C. thurifera 1010
C. torulosa 2835
Cynometra alexandri **2000, 2030**
C. mildbraedii 2933
C. sessiliflora 1027
Cytisus (*sarothamnus*) *scoparius* p. 399, 1101, 1560, **2261**

Dacrydium cupressinum 1605, **2047**
Dacryodes excelsa 1894
Daemonorops sp. **3292, 3314**
Dalbergia sp. **2970**
D. latifolia **1280**
D. melanoxylon **2049**
D. retusa **347**
D. sissoo **1280, 1382**, 2835
Dalbergieae **1155**
Daniella spp. 1027
D. alsteeniana 166, 1027
D. ogea **3131**
Daphne oleoides **2253**
Dendrocalamus longispathus 954, **1162**
D. strictus **382**, 954, **1162**, 2599, **3207**
Dichapetalaceae 2727
Dichroa febrifuga **1482**
Dichrostachys glomerata **2257**
D. nutans 3364
Dicorynia paraensis **337**
Didymopanax morototoni 1894
Dillenia philippinensis 2868
D. suffruticosa 1832
Diospyros spp. **351, 2001, 2009**
D. crassiflora **2112**
D. kaki 1022
Diospyros mespiliformis **640**
D. virginiana 722, 1118, 1543
D. xanthochlamys **640**
Dipterocarpaceae **347**
Dipterocarpus spp. **3300**
D. alatus **2216**
Dodecastigma integrifolium sp. nov. 1023
Doxantha unguiscati **1483**
Dracaena cinnabari **3292**
Dryobalanops aromatica 1899, 1924, **2970**
D. oblongifolia 1899
Duboisia myoporoides × *D. leichhardtii* 2688
Dyera costulata **1135, 2187**
Dysoxylum malabaricum **1280**
D. muelleri **391**

Elaeagnus angustifolia 300, **647**, 927, 2366
Elaeis guineensis 2634, 2663, 3411
Elaeocarpus ganitrus **461**
Elaeodendron glaucum 2838
Encelia farinosa 693
Endospermum peltatum 2868
Engelhardtia sp. 1004
Entandrophragma angolense **2049, 2185**
E. candollei **2972**
E. cylindricum 2916
E. palmerstoni 3528
E. utile **457, 1134**, 3443
Enterolobium cyclocarpum 1876
E. timbouva 1095
Eperua spp. **2006**
E. falcata **2006, 2053**
Ephedra spp. 293, 927, 1775
Ephedranthus guianensis **2011**
Eremophila mitchelli 73
Erica arborea **2002**
E. cinerea 1560
Ericaceae **1411**
Erythrina crista-galli **3237**
Erythrophleum sp. **571**
E. africanum 165
E. guineense **2049, 3277**
Erythropsis barteri **3313**
Erythroxylum mannii **349**
Eucalyptus 151, **381, 520, 1176**
Eucalyptus spp.: ecology in Australia 2730; in—(Ecuador) 240, (France) 1883, (India) 1505, (Java) 241–2, (Morocco) 238, **636**, 1874, (Spain) 1915, (Turkey) 236–7; termite injury to seedlings p. 7; transpiration in S. Africa 1749; trials on Black Sea coast 2833; **wood:** charcoal **1411**; fibreboard **1343**; properties and uses **1143**; pulp **1336–7**
E. acmenioides **1384**
E. alba 241
E. amygdalina 236
E. bicostata 1144
E. botryoides **2019**
E. calophylla **1514**
E. camaldulensis see *E. rostrata*
E. citriodora 2297, **3302–3**
E. cladocalyx **657**
E. corymbosa **1514**
E. dalrympleana 1750
E. deglupta 241, 1050, 1899
E. diversicolor **632**, 2927, **2970**
E. dives 1766
Eucalyptus gigantea 1750
E. globulus 236, **1144, 1503, 2019**, 2927
E. goniocalyx **1514**, 1750
E. grandis 239, 241
E. gummifera 241
E. lindleyana **657**
E. macrorrhyncha 93
E. maculata **1353, 1384**, 1881
E. maideni **1503, 2019**
E. marginata **347, 571, 632, 1353**
E. microcorys 241, **1384**
E. paniculata 241
E. pauciflora 1766
E. pilularis **1353, 1384**
E. pulverulenta **1503**
E. punctata 241
E. racemosa 241
E. redunca **632**
E. regnans: **wood:** chemistry **3027**; fibre-length **1157**; lignin **381, 2041**; paintability **1353**; veneer **3139**
E. robusta 236, 241, 2927
E. rostrata: afforestation of—(mining dumps in Nigeria) 1107, (sand dunes) 2927; borer attack 771; hybrids 237; in Turkey 236; **wood:** properties **1144**; strength **2019**
E. saligna 241, **1335**, 2927, **2976**
E. sideroxylon **636, 657, 1468**
E. staigeriana **1503**
E. tereticornis 2927
E. triantha 241
E. umbellata 241
E. viminalis 236
E. youmani 93
Eucommia ulmoides 950
Eugeissona triste 1561
Eugenia **1156**
E. caryophyllata 2464
E. cuprea **3236**
E. operculata 2838
Euonymus europaeus 1983, 2675, **3286**
E. verrucosus 265, 1898, 2675
Euphorbia ingens **1522**
Eusideroxylon 1832
E. zwageri 220
Evodia xanthoxyloides **646**
Exostema sanctae-luciae **1483**

Fagara spp. 2802, **2974**
F. robiginosa 2802
Fagraea fragrans **1222**
Fagus spp. 1965, 1968, 2847
F. crenata **369**
F. grandifolia 1002, **1148, 1465, 3016, 3082**
F. mexicana 1004
F. moesiaca 1806, 2789
F. orientalis 2685
F. sieboldii **591**
F. sylvatica: bark—(disease) 3377–8, (fungi) 3377; coppice 2850; crown diameter/d.b.h. 842; ecology 153, 984–5, 996; foliage quantity 3505; general account 193; in Latvia 2832; increment 2507, 3497, 3503; injury—(frost) 676, 960, (wind) 675, 3343; insects 1607; leaf morphology 1783; mixtures 2637, 2934; natural regeneration 2864; palaeoecology 1694; resistant to

2,4-D 697; roots—(apical meristems) 2701, (mycorrhizal) 2615, (respiration) 2661; seed storage 270; self pollination 2685; soil under 72; sowing 2914; volume calculation 793; volume tables 799, 1626, 2476; **wood:** bending **3131**; charcoal **1410–1**; decay—(effect on strength) **2054**, (waste due to) **477**; durability and felling season **3048**; fireproofing **1393**; improved wood **1279**; lignin **3033**; nitration products **1178**; preservative treatment **564**; properties **3503**; pulp **556**, **1339**; red heart **3067–8**; saccharification **3240**; seasoning **1398**, **2201**; steaming **2207**; swelling **1166**; use for—(bungs) **1262**, (corestock) **1274**, (sleepers) **2211**, **3048**, **3210**; yield 3507; yield tables 1634, 3508
Fagus sylvatica var. *quercoides* **2999**
Ficus carica 244, **2995**
F. cunia 2838
Finschia 2800
Fitzroya cupressoides **2971**
Flindersia brayleyana 733, **2227**, 3528
F. pubescens 2846
Forestiera acuminata 1543
Fouquieria spp. 171
Fraxinus americana: afforestation of spoil mounds etc. 298, 1961; coppicing ability 1948; effect of flooding on 1543; fertilizer requirements 277; growth rings 2499–500; leaf fall 1052; nutrient intake 926; soil requirements 67; transplanting 1097; **wood:** improved **2125**; selection of tough **2038**; tabular key **1148**
F. excelsior: artificial light, effect on seedlings 288; competition 320; coppicing ability 1948; frost injury 676; in Great Britain 2826; increment 956, 2507; insect 2425; mixture with Larch 1873; nitrogen metabolism 679; roots 927; seed storage 270; site types **2998**; soil requirements 1822; **wood:** bending **3131**; charcoal **1411**; properties **2998**; strength **2037**; yield tables 1634
F. mandshurica **2001**
F. oregona 1029, **1148**
F. ornus 1906
F. oxycarpa 1948, 2719
F. pennsylvanica: afforestation of strip-mined land 1961; disease 1575; suppressed by Oak 1068; wildings 2951; **wood:** properties and site types **2998**; tabular key **1148**
F. pennsylvanica var. *lanceolata* **1148**
F. velutina var. *coriacea* 1029

Galegeae **1155**
Garcinia morella **1485**
Genisteae **1155**
Ginkgo biloba 293, 1745, 1754, 2668
Gleditsia sp. 927
G. aquatica 1543
G. triacanthos 2456, 3382
Gleichenia linearis 1561, 3360
Gmelina arborea 112, 1907
Gnetum gnemon 2703
Gonystylus sympetala 1024
Gossweilerodendron balsamiferum **1401**, **1433**, **2968**
Gossypiospermum praecox **1134**
Grevillea robusta 1095, 2362
Grewia oppositifolia 2838
G. vestita 2838
Guadua angustifolia **1525**
G. paraguayana **1334**
Guaiacum officinale **2127**
Guarea cedrata **1134**
G. trichilioides **347**
Guibourtia arnoldiana **2981**
G. demeusei 1027
G. vuilletiana 2794
Guttiferae 1025

Haematostemon guianensis sp. nov. 1023
Hakea saligna 1123
Halesia sp. **3182**
Hamamelis virginiana 2429
Harungana madagascariensis 2933
Hedysareae **1155**
Heliocarpus 1032
Heritiera minor **1382**, **1471**
Hevea brasiliensis **3204**
Hibiscus elatus 1892
Hippocastanaceae 89
Hippophaë rhamnoides **2242**
Holoptelea grandis **2039**, **2049**
Huertea glandulosa **2011**
Hura crepitans 2788
H. polyandra **1511**
Hymenaea courbaril **337**, 1050, 1095, **1175**, **2216**

Ilex 1020
I. decidua 1543
Imperata cylindrica 1561, 2635
Ipomoea quamoclit **1483**
Isoberlinia globifera **1131**

Jacaranda spp. 719
J. ovalifolia 1749
Juglans spp. **1489**, **3309**
J. cinerea **355**
J. nigra: afforestation of strip-mined land 1962; frost injury 676; growth-inhibiting substances 693; parthenogenesis 105; **wood:** identification **355**; preservative treatment **1361**
J. regia: charcoal **1411**; chemical constituents 1747, **3282–5**; disease 2345; frost injury 676; mycorrhiza, lack of 927; parthenogenesis 105; phenology 106
J. sieboldiana 2344
Juniperus 184
J. spp.: in Lebanon 988; in Mexico 2773; insect 1595; physiological maturity 1920; resistant to root rot 713; vegetative propagation 1753
J. communis **388**, **1194**, **3308**
J. gracilior **2001**
J. macropoda 1932
J. oxycedrus 1874, **2233**
J. phoenicea 1874
J. thurifera 1874, 2713
J. utahensis 1627
J. virginiana: afforestation of strip-mined land 1961; effect of flooding 2297; pencil slats **1436**; seed treatment 269; site quality 841; soil under 56, 1731, 2623

Kerrdora laotica 2778
Keteleeria evelyniana 959
K. fortunei 2854
Khaya anthotheca **2185**
K. ivorensis **348**
Kielmeyera coriacea **3271**
Kingiodendron 1832
Klainedoxa gabonensis 2933
Koompassia malaccensis 1925
Kopsia fruticosa 943
Kydia calycina 2838

Laburnum anagyroides **641**, 2575
Lagerstroemia parviflora 2838
Laguncularia racemosa 2494
Lannea coromandelica **2255**
L. grandis 2781
Lantana camara 1562
Laplacea 1848
Larix spp.: drought injury 924; in N. America 1628; insects 3450–3; vegetative propagation 2672; **wood:** determination of sapwood **1232**; preservative treatment **1361**
L. dahurica 1608
L. decidua: afforestation of—(spoil mounds) 298, (strip-mined land) 2924; artificial light, effect on seedlings 288; butt rot 3373; cankers, colonization by fungi 3377; frost injury 676; in Latvia 2832; increment 3504; insects 758, 2453; litter decomposition 2621; mixtures 1063, 1110, 1873, 2493; monograph on 2504; natural regeneration 2864; nursery practice 1092; pollen 978, 1762; provenance trials 963, 2690; resistant to 2,4-D 1560; root respiration and transpiration 2661; seed—(production) 1921, (storage) 270, 2888, (treatment) 1084, 2891; volume tables 798, 809, 2472; **wood:** charcoal **1411**; paintability **3195**; properties 3504; yield 3507; yield table 1634
×*L. eurolepis* 2492
L. laricina **626–7**, **1390**
L. leptolepis: disease 1570; failure on Pennine limestone 1873; in Belgium 1880; injuries—(drought) 2690, (frost) 676, (pruning) 2459; provenance trials 963; reaction to—(liming) 2629, (selective weedkillers) 1092, 1598; seed treatment 2891; volume increment tables 809
L. occidentalis **1188**, **1198**, **1362**, **3024**, **3213**
L. potaninii **1150**
L. sibirica 2831, 2832, 2909
Lauraceae 2790, 2791
Laurus nobilis 1929
Lebrunia bushaie **2004**
Leguminosae 144, **1155**, 2696
Lepidobotryaceae 2797
Lepidobotrys staudtii 1028
Leptospermum citratum **3301**
L. ericoides 1563, 2321
L. scoparium 1563, 1605, 2321–2
Leucaena spp. 2650
L. glauca **3236**
Licania incana **1243**
Licaria cayennensis **1175**
Linociera domingensis 1894
Liquidambar formosana 2854

Liquidambar orientalis **2252, 3292**
L. styraciflua: afforestation of strip-mined land 1961; forest type in Mexico 1004; increment cores 2496; response to release 1977; **wood:** bungs **1262**; identification **2009**; improved **2125**; natural durability **2052**; preservative treatment **1361**
Liriodendron tulipifera: afforestation of strip-mined land 1962; cross-pollination 2685; dendrochronology 2499, 3498; disease 2344; epicormics 1897; mixtures 275; morphology 137; mycorrhiza 2615; parthenocarpy 101; thinning and pruning 1974; **wood:** bungs **1262**; discoloration **405**; identification **1148**; nailing qualities **3016**; veneer **464**; working qualities **1273**
Lithocarpus densiflorus **1464**, 2328, 2475
Lithraea molleoides **3267**
Litsea chinensis 2838
L. guatemalensis **1507**
Lonchocarpus 195
Lophira procera **347, 2973**
Loranthaceae 3369
Lovoa brownii **2049**
Loxopterygium sagotii **337**
Lupinus spp. 1729
L. arboreus 1101
Lycium vulgare **647**

Maba abyssinica **2185**
Macaranga sp. **461**
Machilus sp. 2838
Maclura pomifera 1962
Maesopsis eminii **2049, 2185**
Magnoliaceae 136
Mahonia acanthifolia **1480, 3279**
M. griffithii **1481**
Mallotus ricinoides 2868
Malus see *Pyrus*
Mammea sp. **2974**
M. americana **1476, 1483**
Mangifera 187, 968
M. indica: chemical composition 1746; cytology 968; fruit, shape of 1835; vegetative propagation 952; **wood:** improved **1280**; wool 1344; termite resistance **1382**
M. sylvatica 1835
Manilkara bidentata **1175**
M. cuneifolia **2049**
M. nitida 1894
Melaleuca bracteata **3301**
M. leucadendron **3118, 3269**
M. linariifolia **1502**
Melia azadirachta **637–8**
M. azedarach 243, 699, **1522**, 2331
M. composita 2796
Meliaceae **458**
Melicope ternata **1473**
Meliosma hachijoensis **357**
Melocanna bambusoides **517, 1162**
Mendoncia gigas **2011**
Meryta sinclairii 2724
Mespilus germanica 927
Metasequoia 142
M. glyptostroboides 142–3, 1756, 2704
M. japonica 2694
Michelia champaca 243
M. velutina **3236**
Mikania scandens 1561
Mimosa spp. 977
M. pudica **1483, 1524**, 1561
Mitragyna 946
M. ciliata **1134**
M. speciosa **3281**
M. stipulosa **1134, 2049**
Monimiaceae 1774
Montezuma speciosissima 1891–2
Mora excelsa **1133**
M. gonggrijpii **1131**
Moringa pterygosperma **1487**
Morus alba 134
M. lactea **2049**
Mundulea sericea **1522**
Musanga smithii 289
Myristica simiarum 2868
Myristicaceae 1844
Myrocarpus frondosus **347**
Myrtaceae **1156**, 1845, 2727
Myrtoideae **3311**

Nectandra sp. **347**
Nephelium mutabile 2868
Nerium indicum **2235**
N. oleander **1522**
Nipa fruticans **1471**
Notaphoebe malabanga 2868
Nothofagus spp. deer damage 1582; disease 731; distribution in Argentina 1819; insects 1590; phenology 1051; regeneration 1913
N. procera **3222**
N. pumilio 731, 786
Nuxia spp.
Nyctanthes arbor-tristis 2838
Nyssa spp. **1148, 1361**
N. aquatica **2125**
N. sylvatica **2126**, 2496

Ochroma lagopus: **wood:** acetic acid **3236**; alkaline effect on water **2048**; fireproofing **1393**; grading **1219**; inflammability **589**; quality of Ceylon-grown **2015**; surface hardeners **1356**
Ocimum kilimandscharicum 231, **1475**, 2320
Ocotea bullata **2001**
O. fragrantissima **356**
O. rubra **1175, 3221**
Octomeles sumatrana **3204**
Okoubaka 2798
O. michelsonii 2798
Olea europaea 130, 1039
O. glandulifera **1516**
Ougeinia dalbergioides 2838
Oxalidaceae 2727
Oxydendrum arboreum **3182**

Pachylobus spp. 2933
Pahudia rhomboidea **2970**
Palaquium spp. **1135**
Papilionatae **2982**
Parinari excelsa **1131**
P. tenuifolia **1243**
Parkia spp. 1876
Parthenium argentatum 693
P. hysterophorum **1483**
Paulownia tomentosa **369**, 2344
Payena spp. **1135**
Peltophorum ferrugineum 1876
Phaseoleae **1155**
Phillyrea media 1929
Phytelephas sp. **1519**
Picea spp.: germination 272; insect 2392; pollination distances 101; regeneration in E. Canada 1910; response to release 1976; sapwood determination **1232**; wind firmness 248, 3343
P. abies: check on *Calluna* sites 2630–2; damping off, control of 2918; diseases 715, 763, 2359; dormancy 97; felling systems 2847; fertilizer requirements 2629; foliage—(chemical analysis) 2626, 2628, (and increment) 3504; general account **343**; height curves 790; in Finland 2852; increment 3504; injury—(drought) 924, (frost) 676, 2296, (pruning) 2459, 2958; insects 758, 762–3, 1593, 2394, 2434, 3441, 3466, (resistant individuals) 3459; light and moisture requirements 958; litter decomposition 2621; mycorrhiza 927; natural regeneration 1055, 2861, 2864; nursery practice 1092; palaeoecology 1694; phenology 2844; polyploidy 2695; provenance trials 964, 2691–2; pure stands in Swabia 2574; resistant to 2,4-D 1560; response to release 2853; root—(competition) 765, (respiration) 2661; seed—(germination) 272, (moisture content) 1083, (production) 1921, (storage) 270, 1083, (treatment) 1084, 2892; seedling identification 184; site quality 2526; soil under 68, 931; stem form 3480; thinning 99, 1968; vegetative propagation 100, 2672, 2676; volume calculation 793–4; volume tables 798, 80, 2505; wind firmness 675; **wood:** barking **3081**; charcoal **1411**; chemistry **388, 2040–1**; decay and pulp yield **519**; floating **2094**; improved **1279**; lignin **1184–6, 3033–5**; pulp **554, 1323**; preservative treatment **564**; seasoning **3225**; tanbark **1460, 2229**; yield **3507**; yield tables 1634, 2505, 3508
P. abies var. *alpestris* 2832
P. ascendens 1013
P. asperata 1047
P. brachytyla 1013, **1150**
P. complanata 1013
P. engelmanni: decay **1198**; germination 272; hybridization 959; insect-killed stands, deterioration of 3442; nailing qualities **2215**; regeneration 2857; selective logging 246–7; volume estimation 2490
P. glauca: germination 272; insects 1603, 2455; planting stock, storage 2910; selective logging 246–7; virgin stands 820; **wood:** pulping **2165**; sapwood determination **1232**
P. jezoensis 256, **2220**
P. likiangensis **1150**
P. mariana: identification of seedlings 185; reduction of weight by post-felling treatment **409**; reproduction 250; needle oil **1501**; pulp **1326–32**; thinning 1970
P. morinda **2219**
P. omorika 133
P. orientalis 2414

Picea pungens 117, 272, 1574
P. rubens: disease 3372; germination 272; identification of seedlings 185; insect 1604; nutrient requirements 1895; response to selective cutting 1059; tanbark **1465**
P. sargentiana 1013
P. sikangensis 1012
P. sitchensis: Broom as nurse 1101; disease 334–5; fungus flora of living stems 3376; hybridization 959; identification of seedlings 185; increment 1629, 2495; insects 960, 3374; litter 2640; nursery practice 1091–2; provenance trials 963; pruning injuries 2459; response to liming 2629; root—(disease) 3344, (space) 3344-5; seed—(germination) 272, (treatment) 1084; volume increment tables 809; windthrow 1540, 3340; **wood:** grading rules **625**; properties **346**, **3009**
P. smithiana 989
Picraena excelsa **1479**
Piliostigma thonningii **2257**
Pinus: breeding 2682–3; heartwood constituents **390**, **3036–43**
P. spp.: bud-pruning 1123; fused-needle disease 2299; Mexican 2773; needle anatomy of 12 spp. 1781; poisoning for bark removal **3082**; pollination distances 101; resistance to weevils 961; sapwood determination **1232**; seed extraction 268
P. albicaulis 1041
P. aristata **1496**, **3038**
P. armandi 120, **1150**
P. balfouriana **1496**
P. banksiana: fire-killed stands, deterioration 1556; hybrids, natural 121; insects 1617–8; pelleted seed 1936; planting stock, storage 2910; regeneration 1910; slash disposal 251; thinning 2938–9; **wood:** grading rules **627**; heartwood extractives **390**; preservative treatment **1361**; pulpwood—(qualities of dead standing wood) **532**, (storage) **1220**; reduction of weight by post-felling treatment **409**; turpentine **1497**
P. brutia see *P. halepensis* var. *brutia*
P. canariensis **1497**, 1881, 2379, 2883
P. caribaea: coppicing 1881; damping off 3409; direct sowing 1935; disease 2354, 3410; management 2519; nutrient requirements 1946; planted under Scrub Oak 1111, 2945; plantations in Tennessee 1882; pruning 326; response to—(fertilizers) 2627, (release) 2945; resin tapping **3295**; seed—(storage) 1082, 1927, (testing) 2894; **wood:** heartwood determination **2983**; pulping **2164**; specific gravity **1167**, **3065**
P. cembra **388**, 2453, 3504
P. cembra var. *sibirica* see *P. sibirica*
P. contorta **390**, **1198**
P. contorta var. *latifolia:* bark thickness 2489; defect, estimation of 2490; hybrids, natural 121; in Finland 2692; increment 2495; insect 3455; management 2848; mixtures 1877; provenance trials 963; thinning 1971; **wood:** chemistry **2046–7**, **3036**; preservative treatment **1361**
Pinus coulteri 961, 2319, 2373
P. coulteri × *P. jeffreyi* 961
P. densiflora 225, **652**, **2220**
P. echinata: afforestation of spoil mounds etc. 1961–2, 2923; disease 3410; fire, effects of 1071, 2309; increment—(and defoliation) 2435, (and thinning) 2491, (radial) 812; insect 1610; plantations in Tennessee 1882; pollen dispersal 102; provenance trials 965–6; regeneration 1071; response to release 1116; thinning 822, 2491; **wood:** grading **3262**; heartwood determination **2983**; mill study **3177**; pulping **2164**; shrinkage **1165**; specific gravity **3065**
P. eldarica 2917
P. excelsa 989, **2219**, **2249**, **3037**
P. flexilis **1496**
P. halepensis: afforestation of calcareous rocks 1955; direct sowing 1086; insect 2379; planting methods 1105; resin 651; resin tapping **650**, **3297–8**; silviculture in N. Africa 1874; turpentine **1498**; wood chemistry **3040**
P. halepensis var. *brutia* (*P. brutia*) 988, 1086, 1908
P. heldreichii 2715
P. heldreichii var. *leucodermis* (*P. leucodermis*) **651**, **2016**
P. jeffreyi 948, 961, **3036**
P. koraiensis 120, **1182**
P. krempfii 186
P. lambertiana 120, **1209**, **1458–9**, 1923
P. leucodermis see *P. heldreichii* var. *leucodermis*
P. longifolia: cellulose **1161**, **2988**; controlled burning 3533; coppicing 1881; ecology 989; leaves, CaO content 2838; turpentine **2250**
P. maritima see *P. pinaster*
P. massoniana 769
P. merkusii 220, 263, 3527
P. montana see *P. mugo*
P. monticola: diseases 712,787, 1573; knots **1209**; pruning 1125; stand development 821; wood chemistry **3037**
P. mugo (*P. montana*) 90, 716, 1101, **3036**, 3504
P. nigra s.l.: afforestation of sands 300; direct sowing 2912; nomenclature 2771; resin **650–1**; resin tapping **649–50**, **2245**; sexual maturity 2666; silviculture in N. Africa 1874
P. nigra var. *austriaca:* afforestation —(calcareous soils) 1069, (in Italy) 1956; insect 1611; resin tapping **3299**; soil fauna under 2618; soil improver 1956; strength properties **2017**; woodpecker damage 1585
P. nigra var. *calabrica:* afforestation in Italy 1956; disease 2343; general account 1014; reaction to selective weedkillers 1092, 1560; resin **653**; soil improver 1956; thinning 2941; volume increment tables 809; **wood:** chemistry **2046–7**, **3040**; paintability **3195**; preservative treatment **2195**
Pinus nigra var. *caramanica* (*P. pallasiana*) 1908, 2917
P. pallasiana see *P. nigra* var. *caramanica*
P. palustris: direct sowing 1935; disease 3410; machine planting 1089; nursery practice 1093; plantations in Tennessee 1882; pruning 327, 2957; regeneration after fire 2858–9; resin tapping **3295**; response to release 2945; Scrub Oak as nurse 1966, 2945; seed loss to birds and rodents 1072; seedling treatment 2903; **wood:** grading **3262**; heartwood determination **2983**; pulping **2164**; shrinkage **1165**; specific gravity **3065**
P. parviflora **1496**
P. patula 1004, 1881
P. peuce **650**, **651**, 2716, **3293**
P. pinaster: breeding 1763; Broom as nurse **2261**; insects 1587, 2411; resin tapping **1499**; seed—(production) 1921, 2883, (storage and treatment) 2889; silviculture in N. Africa 1874; **wood:** anatomy **353**; charcoal **1411**; chemistry **3040**; lignin extraction **2044**; pulp **1339**, **3179**
P. pinea: dendrochronology 2502; die-back 2462; ecology 988; seed production 1921; silviculture in N. Africa 1874; **wood:** charcoal **1411**; chemistry **3040**
P. pithyusa 1824
P. ponderosa: bark, chemical composition **1458–9**; bibliography 1; cambial growth 2693; dead standing trees 3357; diseases 1570, 2355; fire as ecological factor 3354; increment 813; insects 764; management 2823; pruning 1125, 2959; regeneration 252–4, 2902; response to release 1911; seed—(dispersal) 253, (eaten by rodents) 744; turpentine **1497**; **wood:** decay **1198**; dielectric properties **368**; knots **1209**; nailing properties **2215**; shrinkage **1165**
P. ponderosa var. *scopulorum* 2693
P. pseudostrobus 1004
P. radiata: bibliography **1997**, 2772; disease 3396; in Spain 1056, 1915; management in S. Australia 2520; natural regeneration in N. Zealand 1073; planting methods in Chile 276; response to fertilizers 1734; seed—(production and collection) 2883, (extraction) 1081; thinning 1972; transpiration 1749–50; windbreak 1541; woodwasps 1609; **wood:** chemistry **2046–7**, **3036**; paintability **1353**, **3195**; preservative treatment **3211**; pulp **2166**; quality of plantation grown **1168**; reaction wood **3066**; shrinkage **1165**; specific gravity **1168**
P. resinosa: direct sowing 274; disking before planting 264; general account 226; in New York 2824; increment 814, 1630, 2510; nutrient deficiency 3346; pollen buoyancy 2580; pruning 2960;

resistant to Ammate 2326; seedlings—(storage) 2910, (survival) 255; spacing 283; thinning 2299; **wood:** grading **627**; preservative treatment **1361**; strength **3012**
Pinus rigida 1071, 2310, 2923
P. sibirica 1942, **2251**
P. 'southern' **628–9**, **1333**, **1361**, 2940, 3404
P. strobus: afforestation of—(Laurel slicks) 328, (Rhododendron areas) 2961; breeding 2681; diseases 2681, 3372, 3405; ecology 1002, 1005; embryology 126, 972; in Latvia 2832; increment 2510–1; insects 1594, 1604, 2395, 2681; parthenocarpy 101; planting stock 1947, (storage) 2910; seed production 1921; tanbark **1465**; vegetative propagation 2669; volume tables 801; **wood:** chemistry **3039**; fence-posts 807; fire-killed 1556; grading rules **627**
P. sylvestris: afforestation—(in Uzbekistan) 2917, (of sands) 300, (of spoil mounds) 298; cambial activity 1753; competition 1068; crown diameter/d.b.h. 842, 3482; damping off, control of 2918; diseases 2343, 3398; ecology 162, 1804, 2637; fertilizers, response to 2628, 2898; flowering 2665, (precocious) 1764; foliage—(chemical analysis) 2626, 2628, (physiology) 2656, (quantity) 1780; frost injury 676; insects 758, 1593, 2394, 2412, 2419, 3430, 3465; litter, (decomposition) 928, 2621; maturity, physiological 2666; mixtures 1957; natural regeneration 2862, 2864; nutrient requirements 678; photoperiodism 288, 1942, 2837; planting stock, grading of 278; provenance trials 118, 963–4, 2691; races 119; resin-tapping **2245–6**, **3294**, **3299**; roots—(branching) 109, (mycorrhizal) 59, 927, (respiration and transpiration) 2661; seed—(moisture content) 1085, (production) 1921, (storage) 270, (treatment) 1084; selection 1765; silvicultural data for Switzerland 2825; site requirements 69, 2998; thinning 1973, 2941; vegetative propagation 2672; volume tables 798, 809, 2473; wind resistance 675; **wood:** charcoal **3234**; chemistry **389**, **2042**, **3025–6**; floating **2094**; lignin **380**; moisture content **3003**; preservative treatment **564**; properties and site types **2998**; pulp **2167**; yield 3507; yield tables 824, 1634, 3508
P. taeda: acclimatization in S. hemisphere 224; afforestation of—(Scrub Oak areas) 111, 2945, (strip-mined land) 1961, (spoil mounds) 2923; bibliography 2; competition from hardwoods 1896; defoliation, effects of 2435; disease 717; fertilizers, response to 2627; flooding, effect of 2297; insects 1610; mortality of unthinned stands 3506; natural regeneration 2860; plantations in Tennessee 1882; provenance trials 966–7; response to release 1116, 2945; roots 975; seed—(forecasting crop) 267, (testing) 2894; site quality 840; transpiration 1748; **wood:** durability **2052**; grading **3262**; heartwood determination **2983**; pulp **1326–32**, **2164**; shrinkage **1165**; specific gravity **3065**; strength **2018**
Pinus thunbergii **652**
P. virginiana **2293**, 2923, **3011**, **3037**
P. washoensis **1497**
P. yunnanensis **1150**
Piperaceae 1794
Piptadenia spp. **347**
P. africana **1133**, **2049**
Pistacia sp. 1909
P. atlantica 1874, 1929
P. lentiscus **2310**, **3292**
Pithecellobium saman 1876
Platanus 2799
P. acerifolia 3338
P. linderiana 1004
P. occidentalis **1148**
Platycarya strobilacea 2344
Platycyamus regenellii 1095
Pleogyne cunninghamii **3276**
Ploiarium 203
Podocarpus 1016, 1749, 1788, 2775–6
P. dacrydioides 1605
P. ferrugineus **655**, 1605
P. gracilior **2049**
P. milanjianus **2049**
P. nagi 973
P. spicatus **656**
P. totara 1605, **2047**
Poga oleosa **1132**
Poinciana pulcherrima **1483**
Polyalthia spp. **1280**
Populus: breeding 124, 1768–9, 2686; *Lespedeza* as cover crop 304; plantation practice 228
P. spp.: diseases 1580, 3407; European 1885; hybrids 1769, 1886 2687; in Slovakia 1886; in Turkey 1888; planting methods 1939; pulp **529**; silviculture 2827; soil stabilization 1110; spacing 2907; yield 1631–3
P. acuminata **2215**
P. alba **1411**
P. alba × *P. tremula* 2687
P. angustifolia **3138**
P. balsamifera **409**, 1898
P. 'canadensis' 2661
P. candicans **1486**
P. ciliata 2911
P. deltoides 1115, 1543, 1940, 1962
P. d. var. *virginiana* (*P. monilifera*) **1486**
×*P. eugenei* 1045, **1486**
P. euphratica 2379
P. fremontii **1486**
×*P. marilandica* **1486**
P. monilifera see *P. deltoides* var. *virginiana*
P. nigra s.l.: afforestation of sands 300; barking, effect on vigour etc. 3470; charcoal **1411**; mycorrhiza 927; pulp **1339**; vegetative propagation 953, 1757
P. nigra var. *italica:* activated carbon **3237**; host to crop pests 1983; in Himalayas 2911; mycorrhiza 927; rooting of cuttings 110, 953, 1888, 2670
×*Populus regenerata* **1486**
×*P. robusta* **1486**
×*P. serotina* **1486**
P. suaveolens 1769
P. tremula: cambial activity 1900; chemical control 2324; dispersal of pollen and seed 2723; frost injury 676; giant triploid 2698; hybrids 2687; root respiration 2661; yield 3510
P. tremuloides: bark—(poisoning for removal of) **3082**, (tanning content) **1465**; cambial activity 1752; defoliation, effect on increment 3461; insect 207; natural regeneration after disking 264; **wood:** chemistry **1194**; decay **1200**; grading rules **627**; key **1148**; nailing qualities **2215**; pulping **524–6**, **1320**, **2163**, **2165**, **3181**; reduction of weight by post-felling treatment **409**; sapwood, determination of **1232**; seasoning **1399**
P. tremuloides × *P. tremula* 2687
P. trichocarpa **1486**, 1767, 1967, **2115**, **3138**
P. wislizenii **1486**
Prosopis juliflora 302, 1559, 2329
Prunus 1771
P. amygdalus 927
P. armeniaca 698, 1957
P. cerasifera **3309**, 3347
P. institia 698
P. laurocerasus 97
P. lusitanica 116
P. pennsylvanica **3182**
P. puddum **1472**
P. serotina: bark—(poisoning for removal of) **3082**, (tannin content) **1465**; leaf decomposition 2621; mouse damage 277; natural regeneration after disking 264; wood identification key **2009**
P. serrulata **387**, 1053
P. spinosa **647**
P. yedoensis 1053
Pseudosamanea guachapele **337**, **1175**
Pseudotsuga 1015, 1829
P. taxifolia: bark—(tannin from) **1461**, (wax from) **1457**; breeding 2682; direct sowing 273, (aerial) 1937; diseases 2345, 2348; fertilizers, response to 2629; in Latvia 2832; in Poland 2830; increment **531**, 811, 3493; injury—(snow) 3342, (winter) 1539, 1542; nursery practice 1092; nutrient requirements 2572; physiological forms 117; pollen 978; resistant to 2,4-D 1560; root respiration 2661; seed—(collection) 2884, (dispersal) 1922, (insect pests) 2437, (maturity) 2895, (production) 1921, p. 400, (storage) 270; site quality 1638, 2528, 3526; thinning and pruning 1975, 2942, 2959; volume tables 798, 809, 3485; **wood:** anatomy **2986**, **2990**; briquettes **1416**; charcoal **3235**; creep **1172**; decay **1198**; dielectric properties **367**; gold and silver content **1194**; grading rules **625**; hardboard **1348**; insects 758, 2413, 2862; nailing qualities **2215**; paintability **3195**; preservative treatment **1361**, **1363**, **2197**; properties **3009**; pulp **531**, **1326–32**;

sapwood determination **1362**; sawing **2147**; second-growth **403, 1208, 3013, 3178**; ship's decking **621**; shrinkage **1165**; strength and position in tree **1169**; yield 823; yield tables 1634
Pseudotsuga taxifolia var. *glauca* 2880
Ptaeroxylon obliquum **2001**
Pterocarpus angolensis **571, 1133**
P. indicus **1133**
Pterygopodium balsamiferum **379**
Pycnanthus kombo **349–50, 1222**
Pygeum africanum **2049**
Pyrus 1771, 1772
P. communis **386**, 3368
P. malus s.l. 1752, 1992

Quercus 101, 194, **1148**
Q. spp.: charcoals **1411**; die-back in California 2463; diseases 1577–9, 3379, 3386–91; in Croatia 1805; in Lebanon 988; in Mexico 1004; in Transcarpathia 2847; nutritive value of acorns 1517–8; physiological maturity 1920, poisoning for bark removal **3082**; response to release 1977–8; site quality 2529; sleepers **3247**
Q. aegilops 1784, **2228**
Q. afares 1874
Q. agrifolia 2428
Q. alba: dendrochronology 2500; disease 3387–8, 3406; flooding, effect of 2297; healing of wounds 2293; **wood:** nailing qualities **3016**; seasoning **3223**
Q. aliena 180
Q. borealis: die-back 2359; direct sowing 298; increment in Hungary 1046; mixtures 1064, 2637; planting methods 265; rabbit damage 277; resistant to mildew 730; soil requirements 67; **wood:** properties **2998**, (nailing) **3016**
Q. borealis var. *maxima:* disease 2351–2; flooding, effect of 2297; in Latvia 2832; laminated wood **1271**; soil requirements 71
Q. calliprinos 987
Q. cerris: afforestation in Italy 1956; coppice 1906; ecology in Apulia 1784; inferior to *Q. borealis* 1046; tanbark **2229**; volume table 2477
Q. coccifera 1784, 1874
Q. conferta see *Q. farnetto*
Q. douglasii 2428
Q. dumosa 2319
Q. faginea 1874
Q. farnetto 1784, **2229**
Q. franchetii 1839
Q. garryana 2475
Q. ilex: afforestation in Italy 1956; coppice 1906; disease 727; ecology 997, 1784; hybrid 1840; insects 1587; silviculture in N. Africa 1874; wood anatomy **2994**
Q. ithaburensis 987, 1751
Q. kelloggii **2205**, 2428, 2475
Q. lanata 1839
Q. laurifolia **1270, 2125**
Q. lobata 2428
Q. lyrata **1270, 2125**, 2297
Q. macrocarpa 2280, 3387–8
Q. marilandica 1966, 3387–8
Q. mongolica 233, 1033
×*Q. morisii* 1840
Quercus nigra **1270**
Q. occidentalis 234
Q. palustris 1543, 2915
Q. phellos **1270**
Q. prinus 2297
Q. pubescens 727, 1026, 1576, 1784, **2994**
Q. robur s.l.: crown diameter/d.b.h. 842; die-back in France 3472; disease 2345; fertilizers, response to 2629, 2633; frost injury 676; increment 816, 2507; leaf decomposition 2621; mixtures 1969, 2493, 2935; mycorrhiza 927; nursery practice p. 134; photoperiodism 288; seed storage 270; soil micro-organisms under 931, 2618; sowing 2914; transpiration 1748; transplanting 1097; volume table 2478; wind resistance 675; **wood:** barking **3081**; basket-making **3249**; bending **3251**; inflammability **589**; moisture content **3003**; preservative treatment **2188**; seasoning **1398, 1408, 2201, 2206**; yield tables 1634, 3508
Q. robur s.s.: afforestation of alkaline areas 300; cambial activity 1752; competition 321, 1066, 1068; ecology in Apulia 103; mixtures 260; mycorrhiza 322; patch sowing 321, 1119–21, 1987–9, 2899, 2952–5; planting in trenches 265; root respiration 2661; soil requirements 70–1; **wood:** properties **2998**; seasoning **3222, 3229, 3231**
Q. serrata **369**
Q. sessiliflora: afforestation in Italy 1956; calcareous soils 1061, 1065; diseases 727, 1576; ecology 1805–6, 2720; frost crack 3340; general account 1026; in the Vosges 2637; light requirements 2866; root respiration 2661; soil requirements 71, 1805; tanbark **2229**
Q. stellata 727, 1759
Q. suber: bark chemistry **2232**; diseases 728, 2345; ecology 1784; grafting 955; hybrid with *Q. ilex* 1840, in Crimea 234; insects 1785; silviculture 1874, **3270**
Q. toza 730
Q. troiana 1784
Q. velutina 926, 2500
Q. virginiana 1759
Quiina acutangula 976

Rauwolfia natalensis 2835
Reynosia septentrionalis **1464**
Rhamnus alaternus **1154**, 2667, **2996**
R. cathartica 1983
R. dahurica 1990
R. frangula 1034
Rhizophora mangle **1483**
R. mucronata **1471**
Rhododendron spp, 290, 1945
Rhus spp. **1470**, 3444
R. copallina **1464, 1470**
R. cotinus **2230**
R. pentaphylla **636**
R. typhina **634**, 926, **1470**, 1575
Ricinus communis **1522**
Robinia pseudoacacia: afforestation of—(sands) 300, (strip-mined land) 1108, 1961–2; bark, chemical constituents 947; barking, effects of 3470; chemical control 1560, 2326; crown diameter/d.b.h. 842; direct sowing 1938; disease 2344; frost injury 676; growth-inhibiting substances 693; insect 3448; mixtures 275, 1957; mycorrhiza 927; preservative treatment **1361**; seed storage 270; soil improver 1101
Rosa dumetorum 698
R. multiflora 1991, 2949
Rosaceae 138, **1506**
Roupala brasiliensis 1095
Rubus spp. 298, 696
R. idaeus 1560
Rutaceae **2236–7**
Ryania speciosa **2238–40**

Salix spp.: chemical control 2324; in Switzerland 2721; pollen 2709; roots, adventitious 2702; soil stabilization in N. Zealand 1110; wood chemistry **388**; yield 1631
S. acutifolia 301, 1068, 2898, 2926
S. alba 2927
S. alba var. *caerulea* 2828
S. amygdalina 301
S. appendiculata 1846
S. babylonica 2379, **3237**
S. caprea 1752, 2723
S. caspica 2926
S. daphnoides 301, 2926
S. elaeagnos 1846
S. fragilis 2670, 2911
×*S. hebecarpa* 201
S. insignis 2911
S. lambertiana 301
S. laurifolia 2670
S. nigra **355**, 1543
S. pentandra 301
×*S. simulans* 201
S. viminalis 2911
S. viminalis var. *purpurea* 301
Salmalia malabarica see *Bombax malabaricum*
Sambucus nigra 679
S. racemosa 1898
Santalaceae 139
Santalum album 1889, **2014**
S. austro-caledonicum 202
Sapindaceae 89
Sapindus saponaria **1483**
Sapium (*Stillingia*) *sebiferum* 699, **1509**
Sarcocephalus diderrichii 1090
Sarothamnus scoparius see *Cytisus scoparius*
Sassafras albidum **1148**, 2499
Saxifragites latifolius 2779
Schefflerodendron 1842
S. gilbertianum sp. nov. 1842
Schima noronhae **3236**
Schizostachyum mucronatum 2868
Schleichera oleosa **1527, 3236**
Schrebera macrantha **2039, 2049**
S. swietenioides 2361, 2705
Sciadopitys verticillata **2220**
Sclerocarya birrea **3266**
Semecarpus anacardium 2838
Sequoia 2580, 2694
S. gigantea 1585
S. sempervirens: bark, utilization of **1456**; callus formation 131; direct sowing 275; volume table 2474; **wood:** durability **2175**; paintability **3195**; strength **3014**; working qualities **1273**

Sesbania grandiflora 60
Shorea spp. 1112, **1433**, 1833, **2968**
S. acuminata 1925
S. leprosula **1222**, 1925
S. parvifolia 1925
S. resinanigra 1925
S. robusta **1343**, 1808, 2506, 2838, p. 7
Sinocalamus oldhami **3207**
Sloanea berteriana 1894
Solanum incanum **1522**
S. melogena **647**
Sonneratia acida 2043
S. apetala **1471**
Sophora sp. 265
S. japonica 3470
Sophoreae **1155**
Sorbus aria 2801
S. aucuparia 265, 1773, 2801
S. torminalis 2801
Spartium junceum **2261**
Staphylea sp. 265
Sterculia oblonga **2000**
S. setigera **1515**
S. villosa **2061**
Sterculiaceae 125, 2707
Stereospermum suaveolens 2838
Stillingia sebifera see *Sapium sebiferum*
Strophanthus spp. 188, **639**, 2710
S. barteri 2783
S. gratus 2783
S. hispidus 2783, **3273**
S. preussii 2783
S. sarmentosus **1478**, 2710, 2783, **3273**
Strychnos 197
S. holstii **642–3**
S. toxifera **644**
Styrax tonkinensis 1031
Swietenia macrophylla: in Malaya 1050; mulching 1944; oil **1511**; planted under secondary forest 1112; thinning 2515; **wood:** figure **365**; identification **2010**; inflammability **589**; ship's decking **1433**; tension wood **1210**
Symphonia globulifera **2001–2**
Syncarpia laurifolia **1189**
Syringa vulgaris 679
Syzygium spp. nov. 1845

Tabebuia donnell-smithii **337**, 1890
T. guayacan **1175**
T. pallida 1894, 3338
T. pentaphylla **337**
Tabernanthe iboga **2003**
Taiwania flousiana 141
Tamarix spp. 302, 3444
T. articulata p. 7
T. gracilis 96
T. karelini 96
Tarrietia javanica **347**
T. utilis **349**, **2000**, **2002**, **2968**
Taxodieae 127
Taxodium 2580
T. distichum **630–1**, **1436**, **2125**, 2297
T. mucronatum 2774
Taxus spp. 1753–4
T. baccata 986, **1133**, 2714, p. 399
Teclea 200
Tecoma capensis 1123
Tecoma peroba **1433**
Tectona grandis: defoliation and date of flushing 3460; disease 2357; general account 220; roots—(competition) 2661, (termite attack) p. 7; site quality 1639; stumps, halved 1941; yield regulation 3529; **wood:** durability **571**; mine timbers 1907; properties—(chemical) **3046**, (physical) **2972**; ship's decking **1433**
Tephrosia cinerea **3289**
T. noctiflora **3289**
Terminalia amazonia **337**
T. belerica **1285**
T. ivorensis **3131**
T. superba **379**, **1224**, **2975**
T. tomentosa **1382**
T. velutina **2049**
Terna gen. nov. 195
Tessmannia africana 1027
T. anomala 1027
T. yangambiensis 1027
Tetraclinis articulata **1190**, **3292**
Tetrazygia eleagnoides **2062**
Thea oleosa **3305**
Thouinia striata **2062**
Thuja spp. 713, 1595
T. occidentalis: cambial activity 957, 1752; insects 770; vegetative propagation 1753–4; **wood:** chemistry **388**; preservative treatment **1390**; shingles **626**
T. orientalis 1933
T. plicata: direct sowing 273; general account 1042; mixtures 1063; nursery practice 1092; nutrient requirements 2572; seed dispersal 1922; **wood:** corrosion by metal **2048**; decay **1197**; fibreboard from shingle-mill waste **3190**; grading rules **625**; hives **3257**; paintability **3195**; pencil slats **1436**; preservative treatment **1361**; pulp **1326–32**; seasoning **3222**
Thyrsostachys oliveri 954
Tilia 67, 128, 277
T. spp.: disease 3381; frost injury 676; insect 1613; poisoning for bark removal **3082**; seed storage 270; **wood:** charcoal **1411**; key **1148**; nailing qualities **3016**; pulp **1339**; swelling **1166**
T. americana 1097, 1620
T. cordata (*T. parvifolia*) 927, 1581, 1752, 2661
T. dasystyla 3381
T. europaea 956, 3381
T. neglecta 3381
T. parvifolia see *T. cordata*
T. platyphyllos 2843, 3381
T. ulmifolia 111
Tiparvia guianensis **2011**
Trema 1832
T. orientalis 2868, **3236**
Trichilia hirta **1511**
Trifoliae **1155**
Trigoniaceae 2727
Tristania conferta **1384**
Tsuga spp. **1232**, **1362**
T. canadensis 978, **1464–5**
Tsuga crassifolia 959
T. heterophylla: direct sowing 273; disease 3473; hybridization 959; increment 1043, 1628; nutrient requirements 2572; seed dispersal 1922; tanbark **1462–4**; **wood:** decay 711, **1198**, **3050**; grading rules **625–6**; nailing qualities **2278**; preservative treatment **1361**; properties **344–5**; pulp **1326–32**; stacked pulpwood 3490
T. hookeriana 959
T. jeffreyi 959
T. longibracteata 959
T. mertensiana **1198**
T. sieboldii **2220**
Turraeanthus africana **348**, **1401**

Ulmus 974, 1758, 1849, 2359
U. spp.: diseases 734–8, 3392–5; frost injury 676; insects 773, 2397; poisoning for bark removal **3082**; wood bending **3131**
U. americana: diseases 2353, 2360, 2365, 2424; flooding, effect of 1543; insect 3449; natural regeneration 264; roots—(gas injury) 2302, (regeneration) 2915; soil requirements 67; **wood:** bending **2112**; key **1148**
U. androssovi 2671
U. campestris: cambial activity 1900; increment 2507; sowing and planting 2575; var. *suberosa* 1983, 1986
U. coritana 204
U. densa 2671
U. foliacea 1986
U. fulva **1148**
U. glabra 1752
U. parvifolia 2430
U. pinnato-ramosa 2671
U. procera 2294, **3222**
U. scabra 2671
U. suberosa see *U. campestris* var. *s.*
U. thomasi **1148**, **2112**
Umbelliferae 2727
Urera baccifera **1483**

Vangueria spinosa **1513**
Viburnum tinus **2992**
Viscum album f. spec. *abietis* 2332–4, 3368
Vitex parviflora **2970**
V. peduncularis **1484**
Vochysiaceae 2727
Vouacapoua americana **2972**

Waltheria americana **1483**
W. indica 2700
Warszewiczia coccinea **1483**
Weinmannia pinnata 1004
Wightia 1847

Xanthoxylum see *Zanthoxylum*

Zanthoxylum (*Xanthoxylum*) spp. 2802, **3274**
Z. flavum 1928, **2001**
Z. rhetsa **1280**. **3304**
Zeyhera montana **2011**
Zizyphus jujuba **1527**
Zygophyllaceae 2727

SUBJECT INDEX

ABIKRAFT **549**
Accidents p. 558
Acclimatization 224, 226, 238, 240; *see also* Exotics
Accountancy 850, 2536
Acorns, nutritive value **1517–8**
Aerial photography *see* Surveys, aerial
Aerosols 2383–4
Afforestation 297–302, 1100–10, 1951–62, 2922–32; alkaline soils 302; barren, stony sites 299; calcareous rocks 1955; effect on soil biology 930, 2618–9, 2636; eroded soils 1882, 1956; grasslands 2932; heathland 1101–2, 2629–32, 2636, 2928; old fields 1110; peatland 1100; river banks and floodland 1109, 2927; saline soils 302; sands 300–1, 316, 930, 1104, 1957–8, 2618, 2925–7; spoil mounds, etc. 297–8, 1107, 1951, 2923; strip-mined land 1108, 1960–2, 2924; swamps and waterlogged ground 71
Age of stand, estimation 3492
Age of trees: and—(pulp quality) **531**, (seed production) 1920, (strength of wood) **2018**; determination 2495–6, 3493; physiological 99
Agri-silviculture 2574; (in establishment of steppe shelterbelts) 1119–21, 1989, 2952–4; *see also* Taungya
Aircraft construction, wood products in **617**, **1432**
Aircraft in forestry *see* Direct sowing, Fire, Helicopters, Insect pests, Surveys
Alcohol from sulphite waste liquor **600**; *see also* Hydrolysis
Alinement charts 2465
Alkaloids **641–6**, 943, **1480–3**, **2236–7**, **3275–81**
Altitude: and—(bark-beetle attack) 1601, (tree-growth) 2746; *see also* Timberlines
Ambrosia beetles 1034–5, **1206**, **1221–3**, **3050**, **3086**
Ammate, use for poisoning trees 117–8, 313–5, 2945; *see also* Weedkillers
Anatomy *see* Leaf, Wood, etc., and Morphology
Anthracnose 3406
Antibiotics: in wood extractives 2664; produced by—(higher plants) 693, 2320, (soil fungi) 710, 1572, 2343, 2610–3
Ants: control of gypsy moth by 1585; damage to plantations 2927, 2932; leaf-cutter 2432; nest in Oak heartwood 778
Aphids 1036, 2425–6, 3446–7, (mass flights) 1865
Arboreta 22, 2573
Arboriculture 293–6, 1098–9, 1950, 2921; *see also* Ornamental trees, Tree surgery
Aridity, index of 160, 1000, 3496
Aromatic plants **1505–6**
Aspect 2637
Assimilation *see* Physiology
Associations *see* Co-operatives
Assortments 806
Auxiliary spp. *see* Nurse spp.
Auxin *see* Growth substances
Avalanches **2287–8**, 2604

BACTERIA, soil 929–30
Bacterial diseases of trees 733, 2335
Bagworms 770
Balsams **3293**
Bamboo: diesel fuel from **598**; disease 3408; effect on soil 2609; gregarious flowering p. 134; harvesting **3207**; management for pulp production 2599; preservative treatment **575**, **3207**; properties **1525**; pulp **517**, **2170**, (textile) p. 255; seasoning **3207**; vegetative propagation 108, 954
Bark: chemistry **637**, **1472–3**, **2227**, **2232**, (seasonal variation) 947; crusher **2152**; diagnostic value 1844; disease 3377–8; fibreboard **1343**; fungicidal substances in **1486**; injuries 2459; methods of photographing 2711; pulping **533**; respiration and transpiration 2659; rope **3313**; thickness 2489; utilization **1454–6**; wax from **1457**; *see also* Cork, Tanstuffs
Bark-beetles 210–11, 729–64, 1598–1602, 1860–2, 2404–24, 2572, 3437–42; acquired resistance to DDT p. 257; altitudinal limit 1601; associated fungi 763, 1034–5, 1863; bibliography 2415; biological control 1598; causes of epidemics 762–3, 2404, 2416; control—(chemical) 773, 2404, 2422–4, **3086**, 3437, (programmes) 2405–8, 2421, 3437–9, (steam) 759; parasites 2419; *see also* Dutch Elm Disease
Barking **3078–83**; chemical **421**, **2082**, **3082–3**, pp. 135–6; effect on—(ambrosia-beetle attack) **1222**, (living trees) 3470; girdling to facilitate **3081**; machines **2081**, **3079–80**, (hydraulic) **422**, **1217**, **2080**; season **3081**; 'sour felling', effect of **409**; time studies **419**
Basal area 2480–1, 2515; calculation 1625, 2484; increment 1971, 2511
Battery separators **2219–20**, **3252–3**
'Baumvelo' 2885, p. 266
Beams, composite **1530–1**
Bearings **2221**
Beating up 2864
Beavers 2298, 2819
Beehives **3257–8**
Bees: leaf damage by 779; toxicity of insecticides to 752
Bending **457**, **1253**, **2112**, **3128–31**, **3251**; laminated wood **2113**; plywood **3132**
BHC *see* Insecticides
Binoculars with mil scale 791
Biocores 1801
Birds: consumption of seeds 1072; damage by 745, 1585; pest control 749, 765, 1586, 2388–9; populations 739, 2817; protection of sowings from 1934–5
Bleaching of wood **1351**
Blight: Chestnut 723–7, 2350, 3383–5; Manuka 701–2, 1563, 2321–2; needle 3403–5
Blister rust 2336, 3400–1
Blue-stain *see* Stain
Boats and ships **618–20**, **3251**; decking **621**, **1433**, **2216**; plywood **2217**
Boliden salts **2179**, **3201**
Borers 206–9, 1856–8, 2391, 3426–8, 3472; *see also* Marine borers, and Preservation, wood
Borlac **1382**
Bottle grafting 124
Boxes *see* Packing containers
Bracken eradication 3360
Branch development and suppression 3497
Branchiness 2852
Breeding, tree 112–24, 959–71, 1760–9, 2679–98; Conference 1676; for—(alkaloid production) 2688, (disease resistance) 2359, 2680–1, 2687, (improved stem form) 2689, (pulp production) 1768, (resistance to insect attack) 961, 2682, 3459; research institutes 2571–2; *see also* Hybridization, Polyploids, Provenance, Seed, and Species Index
Bridges **2284–5**, **3332–4**
Briquettes **1414–6**, **3120**, p. 135
Brittle heart **3015**
Broom: as nurse species 1101, **2261**; textile fibres **2261**, p. 399
Budworm: associated larvae 218; environmental studies 1617–8; forecasting outbreaks 3467; injury to cones 2455; mass flights 217; parasites 2454; risk classes 766
Buildings and their construction **666**, **1528–36**, **2274–8**, **3317–26**; 'demountable' structures **3319**; economy in use of wood **1528–9**; moisture in **2276**; tests **3320**; use of paper **3326**
Bulldozers 2922
Bundling **2092–3**, **3089**, **3105**, (of pulpwood) 1685
Bungs **1262**
Burning, early or prescribed 2309, 2519, 2858–9, 3353–4; for site preparation 254, 261, 1071–2, 1074–5; *see also* Fire
'Bushwhacker' **423**

CABLEWAYS **439**, **1233**, **2096–8**
Calculating machines 3476
Calipers 1622, 3477, pp. 265–6, (self-registering) 3476
Callus formation 1620, 2293–5, 3470
Calorific value **2028**

Cambial activity 111, 956, 1900, 2693, **2994–5**
Cambium 957, **1152**, **1179**
Camphor **1475**, 2320
Camping 877
'Campos cerrados' 2763
Canes **1526**, **3314**
Canker: on conifers 714, 717, 1573–4, 2346–8; on hardwoods 720, 724–7, 738, 2351–3, 3379–82; relation to frost 677, 3376–7
Cankerworms 216, 782
Carbon, radioactive dating of 1692, 2579
Card-sorting methods **1147**, 2378, 2488; *see also* Keys
Cashew products **1374**
Catchment areas: afforestation 2645–6; management 2547, 2644
Cell wall 1667; changes caused by decay **393**, **3049**; chemistry **358**, **360**, **3017**; *see also* Wood anatomy
Cellulose: chemistry **521**, **1177**, **3020–2**; fibre structure **383–7**; fractionation **521**; pyrolysis **596**
Chafer control 755–7, 1596–8, 2399–403, 3434–6
Charcoal: activated **3237**; analysis **3233–4**, **3236**; briquettes **1414–6**, **3120**; characters and indentification **1411**; consumption **2272**; kilns **599**, **1412–3**, (electric) **3236**; Mangrove **1412**; manufacture **1412**, **3234–6**, (compared with geological carbonization) **2208**, (from sawdust) **1415**; suitable species **2006**; use for iron smelting **597**; *see also* Distillation
Checking, prevention of **2177**, **3251**
Chemical constituents of plants 64, 89–95, 119, **394–9**, **637–47**, **654–6** 678–9, 710, 925, 942–7, **1175–94**, **1456–8**, **1477–89**, **1496–7**, **1501–2**, **1507–16**, 1745–7, 1773, **2040–8**, **2227**, **2232**, **2236–42**, **2249–51**, 2626, 2651, 2664, 2838, **3017–47**, **3274–89**, **3301–6**; *see also* Alkaloids, Bark, Oils, Resin, Tannins, Vitamins, Wood chemistry
Chemicals, resistance of wood to **3244**
Chemotherapy 1575, 2359, 3336, 3395
Chermes 765, 1604, (control by squirrels) 2390
Chimaeras 970
Chipmunk damage 744
Chippers, portable **424–5**, **2083–4**, 2458, **3085**
Chlordan(e) **577–8**, **1380**
Chlorophyll 948, 2654
Chlorosis 679
Chromosomes *see* Cytology
Cicada damage 1605
Classification, decimal system 1658
Cleanings: effect of 2937; season for 306; time studies 2936
Clear felling in strips 1055
Climate: changes in 2602–3, 2763; influence on vegetation 160–1, 983, 1797, 1801, 2733; of Mediterranean basin 920; *see also* Forest influences, Dendrochronology, Microclimate, etc.
Climber cutting 257
Climbing devices 2885, pp. 265–6
Colonial Development Corporation 2563, p. 135
Colonization 878, 2599
Colouring, wood **557**, **1352**
Compensation *see* Valuation
Competition 247, 1896, 1898, 1909, 2493, 3359, (views of Lysenko's school on) 320, 1065–8, 1957
Compression wood **3066**
Concrete, use of wood to reinforce p. 255
Cones, formation on grafted trees 100
Conferences: agricultural genetics 1676; forestry 12, 1675, 2565–6; natural resources 13; tropical botany p. 256
Connectors, timber **666**, **1530**, **3319**, (unsuited for use with Australian hardwoods) **3321**
Consolidation of scattered holdings 3561
Conversion: coppice to high forest 1065; coppice-with-standards to selection forest 245; general methods 1062; mixed to pure stands 1969; pure to mixed stands 2864, 2928; scrub to forest 328, 2961; tropical virgin forest to management 846
Conversion factors and tables 792, 3473–4
Cooperage **2114**, **3136**, **3223**
Co-operative sustained units 887, 2534
Co-operatives 3559–60
Copal gum 1027
Coppice: conversion to high forest 245, 1065; Mangrove 2494; production 1906–7; regeneration of standards 1061; selective felling 2850; volume increment 816
Coppicing: chemical control of 2328, 3363–4; factors affecting 1948, 2849
Cordwood, stacked volume 3490
Cork: chemistry **2232**; from species other than *Q. suber* **3269**, **3271**; silviculture **3270**; uses **1474**; *see also Quercus suber* and Geographical Index
Corrosion of metal by wood **2048**
Cortisone **1478**
Cover crops 86, 304, 1101, 1743–4, 1743–4, 1908, 2629, 2650, 2923
Crates *see* Packing containers
Creep in timber **1172**, **1996**, **2034**
Crown: correlation with d.b.h. 2510, 3482; development 3497; relation to increment 327, 3503–4
Cruising 805, 2485; *see also* Enumeration, Volume
Cryptogil **1224**
Cultivation, soil *see* Regeneration
Cultivators 264, 1078–9, 1918–9, 2876–7; *see also* Ploughs
Cuttings *see* Propagation, vegetative
Cytology 114–6, 968–71, 1761, 2694–8, 2706

Damping-off 1063, 2339; control 292, 2340, 3409
Death-watch beetle **401**, **3056**
Decay in trees 711–3, 718, 1570–2, 2342–5, 3373–5; *see also* Fungus diseases
Decay in wood **394–9**, **427–9**, **518–9**, **1195–1201**, **2050–7**, **3049–54**; development and changes in cell wall **393**, **3049**; effect on—(concrete) **2055**, (pulp) **518–9**, **2162**, (recoverable volume) 802, (strength) **393**, **2054**; in buildings **3323–5**; in water-cooling towers **3049**
Dedication of woodlands 1653
Deer: damage 740–1, 1582–3, 1912, 2374–5, 2841; effect of droppings on soil fertility 1733; populations 1870; repellents 742, 3412
Defects **404–5**, **1209–10**, **2064**; estimating 2490, 3491
Deficiency, nutrient 678–9, 925–6, 2300, 2824, 3343–6
Defoliation: (control) 3460; (effects) 1610, 2435, 3461
Demonstration forests, signs for 21
Dendrochronology 2495–502, 3498; *see also* Rings, growth
Dendrometers 2572, pp. 266–8, (dial-gauge) 811, 2693, 3461
Dermatitis **1193**
Diameter: fluctuations 812–3; instruments for measuring 1622, 2507, 3476–7, pp. 263–5; stand 1625; *see also* Increment
Die-back 716, 1621, 2462, 3344, 3471; *see also* Species Index
Dielectric heating: of wood before preservative treatment **1367**; to kill borers in roofs **3206**; *see also* Gluing and Seasoning
Direct sowing 273–5, 1086, 1934–8, 2896–901, 2932, 3413; broadcast *vs.* spot 2900; from aircraft 1937, (of cover crops) 86; in lines under light cover 2935; 'nests' 321, 1119–21, 1987–9, 2954–5; on spoil mounds 298; protection from—(birds) 1935, (rodents) 273, 2371–3, 3413; tools 1934, 1936, 2896; *vs.* planting 1101, 1938; with pelleted seed 273, 1936
Discolouration of wood **405**, **3063**, **3067–8** *see also* Stain
Disease *see* Decay in trees; Deficiency, nutrient; Die-back; Fungus diseases; Virus diseases
Disorders due to unidentified causes 786–7, 1621, 1686, 2461–4, 3471–2
Distillation, wood (destructive) **442**, **596–9**, **1410**, **3233–6**, (in kerosene) **2209**, **3235**
Documentation, forestry 1–2, 1658–61, 1664, 2559
Doors: flush **604**, **1422**, **3241**; testing **3242**
Dormancy: (seed) 1930, 1932; (trees) 2846
Dowicide **3208**
Drainage **2286**, **3343**; effect on level of peat **3335**; maintenance **1537**
Drainpipes, wooden **1438**
Drought, effects of 924, 2662, 3341, 3471; *see also* Aridity, Index of
Drought-resistant spp. 924
Dry areas *see* Afforestation
Dry rot **571**, **3324**, (preservative treatment) **571–2**, **3214**
Durability **2049**, **2052–3**, **2175**, **2181**; effect of felling season **3048**, **3210**; *see also* Chemicals, resistance to

Durisol **551**
Dusters 2442, 3437
Dutch Elm Disease 734–7, 2336, 2359–60, 3392–5, (vectors) 735, 737, 2360, 2397
Dyeing *see* Colouring

'Earth rays' 2605
Ecology, animal *see* Birds, Deer, etc.
Ecology, plant: general textbooks 140, 983–4, importance in forestry 219, 2730; 'Leitgesellschaft' 2732; monoclimax theory, weakness of 2731
Economics, forest 848–50, 1642, 2535, 3533–7
Education 14, 1678–9
Electrical properties, wood **367–8, 3000**
Electron microscope **1145**
Elk damage 743
Embryo culture 120
Embryology plant 125–8, 972–4, 1771, 2699–700
End-sealing compounds **1366**
Engineering, timber **666, 1528–35, 2274–8, 3317–22**; use of glued construction **1533–4**; *see also* Bridges
Enrichment of tropical forest 1112
Entomology, general 670, 1538, 2289; Mexican bibliography 671; *see also* Insect
Enumeration surveys 3489; *see also* Cruising
Enzymes **395–6**, 1752
Epicormics 1118, 1892, 1897
Epiphytes 3358
Erosion: causes 177, 2646, 2648; choice of silvicultural system to prevent 2847; control 75–7, 81–4, 2649–50; *see also* Afforestation, Infiltration, Shelterbelts, Shifting cultivation
Ethical code for foresters 851
Evaporation: measurement 1720, 1738; *see also* Forest influences
Exotics *see* Acclimatization and Geographical and Species Indexes
Experimental forests 1685
Explosives: for breaking up log jams **3101**; to split logs **2078**
Extraction *see* Hauling, Skidding, etc.
Extractives *see* Wood extractives

FAO *see* Food and Agriculture Organization
Farm woodlands 825, 827, 1657, (licences) 3558; *see also* Private forestry
Fats **1513**
Fekabit 2324
Felling: hand methods 3077; *see also* Logging
Felling areas 2847
Felling season **3048, 3210**
Femelschlag 1070, 1901
Fences 3415, (electric) 3416–7
Fersolin p. 254
Fertilizer(s): animal manure 2920; application 1734, 1946, 2633–4; lead arsenate 2920; peat 2628; phosphate 2627; requirements, determination of 2626–8
Fertilizing 1091–2, 1946, 2633, 2824, 2920; *see also* Liming
Fibreboard **538–51, 1343–50, 2171–5, 3187–93**; Abikraft **549**; Durisol **551**; durability **2173**; Fibrosil p. 400; from—(Areca-nut husk) **550, 1343**, (bark) **1343**, (shavings) p. 400, (shingle-mill waste) **3190**, (veneer waste) **542**; Homogenholz **548**; machining and jointing **2172**; phenolic resins as binder **548–9, 3191**; Resinwood **546**; strength **2036**; testing and grading **540–1, 1349–50, 2173–5, 3193**; Xilon **549**
Fibres: Broom **2261**; East African **1520–1**; Kapok **1520–1, 2259**
Fibrosil p. 400
Figure of wood **365**
Finishes, wood **1356–9, 1392–3, 2217, 3196**; *see also* Paint
Fire: and succession 1001, 1914, 2765; *see also* Burning
Fire control 687–9, 1544, 1546–51, 2304–11, 2350, 3352–5; abstracts 3348; *see also* Burning, Fire-fighting, Helicopters, Radio
Fire damage 691, 1556, 2309, 2317, 2858–9, (to wood) **1207**
Fire danger 683–6, 1545, 3350–1; in timberyards **633**; meteorological instruments for measurement of 684–5, 2303; stream flow as means of forecasting 686
Fire detection: aerial 2311, 3352
Fire exclusion, effects on regeneration 252, 1963
Fire fighting: equipment 1552–3, 2315; use of—(aircraft) 1549–50, 2313, 3352, ('bombs') 2313, (counterfires) 2314, 3356, (television) p. 254, (wetting agents) 690, 2312
Fire insurance 1554–5, 2316
Fire-killed trees 3357
Fire wounds 2309
Firebreaks: cultivated 2261; kept clear by chemicals 1560; planted 2310; ploughed 3355
Fireproofing, wood **589–90, 1371, 1386, 1388, 1393–4, 3218**
Fires, forest 680–1, 683, 1544–5, 3349; effect on water régime 2645–6; measures to prevent 682, 2305–9, 2458
Firewood *see* Fuelwood
Fish, injury from insecticides 2387
Fishing equipment 880
Floating and rafting **438, 1231–2, 2092–5, 3100–5**; booms **1231**; bundling **2092–3, 3089, 3105**; forecasting date of ice-break **3100**; log-jams, breaking up **3101**; sinking, prevention of **1232, 2094**; sorting **3104**; sunk logs, salvage of **2094, 3102**; *see also* Flumes
Flood control 74, 85, 1739–41; legal responsibility for p. 398
Flooding, effect on woody spp. 1543, 2297–8
Flooring **608, 1421**, p. 136; hardwood **2030, 2210, 3004, 3243**; size of boards **1529, 3320**
Floral anatomy 104, 135, 2706–7
Flowering 100, 104–6; induced 2681, 2688; precocious 1764; *see also* Phenology
Flumes **1230, 3103**
Fodder: trees and shrubs yielding **1523–4, 2256–8**; *see also* Molasses
Foliage: abnormal 723; chemical analysis—(for nutrient requirements) 2626–8, 2838, (on saline soils) 119; colour as indication of minerals in soil pp. 400–1; diseases 708, 716, 1580, 2362–3; *see also* Crown, Leaf, Needles
Food and Agriculture Organization (FAO) 1643, pp. 398–9
Forest administration 851–65, 2536, 2538, 3538–41, 3543
Forest influences on: climate and water supply 1684, 2547, 2606; infiltration, run-off and streamflow 938–41, 2645–6; rainfall 48; relative humidity 49; soil moisture 923–4; soil permeability 56; soil temperature 54–5; *see also* Shelterbelts
Forest law 881–3, 2548–9, 3551–6
Forest types: Cajander's classification 2729; *see also* Rain forest, Vegetation, etc., and Geographical Index
Forestry, general textbooks 5–6, 219–20, 895, 1038, 1662, 2820–1
Form, stem: and sp. gr. 3481; estimation 791; in even-aged stands 3480; mathematical expression of 803–4
Fossil tree spp. 910, 2580; *see also* Palaeoecology
Frames, cold **1423**
Frost: injury 237, 676–8, 1542, 2296, 2459, 3339–40, 3376–7; pockets 1073; resistance, factors affecting 235, 947
Fruit trees **3309–12**
Fuelwood: combustion—(charts) **1430**, (systems) **3250**; cutting machines **1310, 3250**; treatment to increase combustibility **1431**; *see also* Waste wood
Fungi: associated with insects 763, 1034–5, 1607, 1863, p. 255; chemical activities 179, 710, 736; edible **1490–1, 3290**: fruiting on felled trees 2342; genetics 181; in—(Great Britain) 2767, (E. Asia) 180, (S. Africa) 2768; nitrogen-fixing 1035; occurrence in healthy trees 718, 3376–7; on buds 2769; saprophytes transformed into parasites 1569, 3372; *see also* Mycorrhiza, Rot fungi, etc.
Fungicides 705; Cheshunt mixture 709; fungicidal substances in plants **1486–7**, 1572
Fungistatic substances in living trees, **3044–6**
Fungus diseases 703–38, 1564–80, 1825–7, 2335–63, 3370–411; effect of pruning 1570; infection—(artificial) 704, 709, 3381–2, 3393–4, (from stumps to healthy roots) 2343, (through natural root grafts) 3388–9, (through wounds) 721–2, 1568–9; vectors 734–5
Furniture beetles **400–1, 1204, 2059, 2188, 3056**
Furniture manufactures **459–60, 1258–9**; plywood 475, **1295–6**; seasoning **592, 2206**; suitable timbers **337**
Fused-needle disease 2300

Galls, plant 733, 744, 1603, 1770, 3444–5, 3471
Game protection **658–9**; *see also* Wildlife
Gammexane **2187–9**; *see also* Insecticides
Gas from wood **2006**, p. 557
Gas generators **1239**, **3238–9**
Gas injury 2302
Genetics 114–6, 959–60; *see also* Breeding, Cytology
Geological formations, influence on vegetation 989, 2839
Girdling 2945; of cull trees 1058; of overwood in tropical forest 1112; to facilitate barking 3081; *see also* Poisoning
Glaze damage 2299
Glossaries: botanical terms 2558; forest terminology 2557; logging **2065**; Spanish-English 896
Glue joints, strength and durability **472**; effect of length **1276**; testing **1297**, **3147**
Glue line, effect on electric moisture meters **370**
Glues 1996, 2128–9; Aerolite **1282**, **2131**, **3152–3**; animal **1281**; blood albumen **1283**; Cashew-nut shell oil **1284**; durability **472**; protein **1285**, **3151**; synthetic resins **471**, **9**, **1297**; use of preservatives in **1385**
Glues and gluing **471–80**, **1281–97**, **2127–36**, **3151–61**
Gluing **479–80**, **1290–7**; dielectric heating **473–5**, **1293–5**, **2133–6**, **3157–9**; glue control **1291**; low voltage heating **1292**, **3160–2**; properties of tropical hardwoods **2127**
Goats 882, 1908
Gold content of trees **1194**
Golf-club heads **3256**
Goodrite 742
Grading: Balsa **1219**; logs **2085**, 3491, (infested by ambrosia beetle) **1206**; lumber **623–32**, **1225–6**, **1439–50**, **2225–6**, **3259–62**; plywood **3146**; *see also* Standards, Stress-grading
Grafting: effect on cone production 100; 'hybrids' formed by 1769, 2681
Grain, wavy **2999**
Grass: forest spp. **205**; chemical control 1092, 1560–1, 3361
Grazing and pastures 891; economics 1952 ; effect of — (leguminous shade-trees) 1876, (selective logging) 1060; hydrological effects 2645; regulation p. 133; *see also* Burning, Erosion, Weed trees and shrubs, Fodder
Ground flora 2852; and site quality 177, 2632, 2729; *see also* Competition
Growth: check 2630–1; initiation and cambial activity 956; of cambium 957; light requirements for 958; stresses 2677–8
Growth-regulating substances 1667; in vegetative propagation 108, 1092, 1755, 2668–70; induction of polyploidy 114, 970; nicotine-base p. 400; prolong blooming 1053; promote—(branching of isolated roots) 109, (root formation in transplants) 1097, 2916, (wound healing) 2292–3; regulate cambial activity 111, 243; *see also* Weed killers
Gums 1027, **1515–6**, **2255**, **3307**
Gypsy moth 1585, 1615, 2443, 3456–8

Hammers, wooden **1435**
Handles, tool **1437**
Hardifloor p. 136
Hardness **371**, **2029–30**
Hare damage 743
Hauling: costs **3092–3**; horse **2091**, **3092**; of pulpwood **431**, **436**; sledges **3091**, **3093**; time studies **3091–9**; tractor and sledge **3093**; truck **432–5**, **2088–90**, **3091**, **3093**; truck and trailer **1229**
Heartwood: comparison of refractory and easily impregnated **1364**; determination **1362**; fungicidal properties 1572; *see also* Wood chemistry
Heather: burning 2630; chemical control 1560, 2325, 2630–1; ecology 2722; indicator of soil fertility 2632
Heathland 997, 2631; *see also* Afforestation
Height: curves 789–90; increment 2992; instruments for measuring 788–90, 3478, pp. 261–3; mean stand 2466, 3479; measurement on air photos 834
Helicopters 3352
Hemicelluloses **387**, **3183**
Herbicides *see* Weed-killers
Heterosis 122–3, 970, 2492, 2684, 2687
Hole-diggers 1917, 2376–7, 2905–6
Homogenholz **548**
Hormones *see* Growth-regulating substances, Weed killers
Horses *vs.* tractors 2876
Houses **666**; tropical **665**, (durability) **3222–3**; *see also* Buildings
Humus 62, 63; C/N ratio 1730; raw 2622, 2637
Hybridization 120–3; intergeneric 959; natural 121–2, 1766, 1835, 1840; vegetative 1769
Hybrids *see* Species Index
Hydrographical conditions 74–88, 938–41, 1684, 1737–41, 2643–6; methods of surveying 938
Hydrolysis **600–1**, **1417–8**, **3240**; *see* Alcohol
Hypsometers 788, pp. 261–3

Ice damage *see* Glaze damage
Identification: diagnostic value of bark 1844; seedlings 185; *see also* Keys
Ignition temperature **3062**
Impregna-Tox **3208**
Improved wood 1279–80, 2123–6; *see also* Strength
Increment 808–16, 1043–8, 1627, 1800, 1890–4, 1971, 1974–8, 2491–502, 2824, 2830, 3494–504; basal area 1971, 2511; 'co-frequency method' of estimating 810; correlation with index of aridity 3496; current 804, 809, 2507; diameter 810–2, 956, 1059, 1627, 1629, 2494, 2820; effect of—(altitude) 1893, (crown size) 327, 3503–4, (defoliation) 1610, 2435, 3461, (insolation) 2502, 3496, (liming) 2629, (precipitation) 1621, 1890, 2498–500, 3496, (pruning) 326, (release cuttings) 312, 1059, 1116, 1976–8, 2945, (summer temperature) 2501, 3494, (thinning) 309–11, 2491, 2939, 2941; girth 816; height 956, 958, 2492, 3493–4, 3497; in understocked stands 821; mean annual 2832; prediction 808; radial *see* diameter; rate 815, 2507, 2510, and—(die-back) 1621, (pulp quality) **531**, **2162**, (sp. gr.) **403**, **1208**, **2016–7**, **3013**, **3065**, (strength) **2017**, **2998**, **3012**; volume (of coppice) 816; *see also* Dendrochronology, Rings, growth
Infiltration and Run-off: measurement 88; *see also* Forest influences
Infra-red heating: seasoning **2203**, **3230**
Ink disease 728, 2345, 3410
Insect pests of trees 206–18, 746–84, 1033–7, 1586–1619, 1850–68, 2378–455, 2805–13, 2824, 3418–67, 3472; associations with fungi 734–5, 1034–5, 1605; bionomics 2381, 2404, 2416, 2445–6, 3455, 3458, 3466–7; control—(aerial) 1615–6, 2448, (biological) 749, 765, 772, 783–4, 1585, 1619, 2346, 2388–90, 2444, (costs) 2408, (dusting) 750–2, 1615, 2381, 2442, 2448, 3437, (silvicultural) 3452–3, 3465, (soil treatment) 2403, (spraying) 753–7, 767–8, 773, 775–7, 1595–9, 1616, 2382–6, 2395, 2400, 2422–4, (steam) 759; of seeds and cones 2437, 2455, **3308**; parasites 2451–4, of — (bark beetles) 2419, (chafers) 1598, (loopers) 2439, (nun moths) 1614, 2447, (sawflies) 213, (scale insects) 212, (spittlebugs) 2427, (tent caterpillars) 2440, (weevils) 772, 1859; pathology 1852–4 ; population sampling 2805; predators 783–4, 1037, 1598, 2441; production of toxic substances 3472; trapping 2399, 2404, 2423, 2443; vectors of diseases 738, 2364, 2431, *see also* Dutch Elm Disease; virus diseases of 1619, 1853–4, 2436; *see also* Barkbeetle, Budworm, etc., and under names of host trees in Species Index
Insect pests of wood **400–2**, 758, **1202–6**, 1856–8, 1861–3, **2058–63**; identification of damage **2058**, **3061**; in tanbark **3268**; *see also* Borers, Termites, etc.
Insecticides 750–7, 3419; arsenical 773, 2395, 2422–3; BHC 755–7, 1597–8, 2386, 2393–4, 2400–1, 2403, 3422, 3429–30, 3436, 3454; bis anhydride 753; Ca cyanamide 3452–3; Camphene 3431; carbolineum 2410; Chlordan(e) 752, 2386, 2402–3, 3430; Cu polysulphide 775; DDT 737, 751, 754, 767–8, 773, 775–7, 1595, 1597, 1599, 1615, 2385–6, 2393, 2409,

2430–1, 2442, 2448, 2450, 2453, 3420–1, 3429–32; derris 2393, 2449, 3452; DNOC 2387, 2393, 2449; E605 *see* parathion; fluosilicates 3452–3; Gammexane *see* BHC; Gesarol *see* DDT; Hexalo *see* BHC; Isopestox p. 399; Methoxychlor 2424; nitro-paraffin 777; Novosil 2393; paints 2409; parathion 770, 1599, 2393, 2402, 2456, 3433, 3454; penetration 3452; plant substances **1476**, **2239–41**, **3288–9**; pyrethrum 2393, 2449, 3452; residual toxicity 2385–7, 3421; rifle grenades 3437; systemic 753, p. 399; tests 2393; Toxaphene 752, 2393, 2424, 2428; toxicity to honey bees 752; **'666'** *see* BHC
Insect-killed trees 3442
Insolation 2502
Integrated wood-using industries **442**, **597**
Interception 1737
Intercropping *see* Agri-silviculture
Isopestox p. 399
Isotope tracer methods 59

JOINTS: glued **472**, **1276**, **1297**, **3147**; nailed **1245**, **1428–9**, **1536**, **2277–8**; *see also* Connectors
Juvenile forms 2840

KAPOK **1520–1**, **2259**
Keys 173, 188, 198, 991, 1020, 1832, 1841, 2767, 2803; *see also* Card-sorting, Wood identification
Kilns *see* Charcoal, Seasoning, Seed
Kinos **1514**
Knots **1209**

LABOUR; age 859; cost of living 860; efficiency **3073**; employment and unemployment 863, 3539, 3541; physiological studies 857; supply 861, 864; training 862, **1215**, 3358; wages **3071–2**; working conditions 3540; *see also* Accidents, Time studies
Lac cultivation **1527**, p. 400
Ladders: manufacture **2223**; testing **622**
Laminated wood: adjustable jig for manufacture of **1266**; arches **606**, **1532**; beams **1530–1**; bending **2113**; buckling **1535**; curved elements **605**; strength **466**, **1277**, **3148**; uses **1295**, **1996**, **3256**; wall and ceiling panelling **607**; Wej-Weld frame construction **1533–4**; wood qualities necessary **1271–2**; *see also* Glues and Gluing, Plywood
Laminates, paper and composite **470**, **3149–50**
Land use 891–3, 1655–6, 2555–6, 3564–8; *see also* Erosion, Grazing, etc.
Lasts **1434**, **3254**
Layering 250, 2674–6
Leaf: anatomy 132–4, 976–7, 1029, 1773, 1779–83; temperature 98; *see also* Fodder, Foliage, Needles
Leaf-fall 1052
Life-form spectra 2759
Light: artificial—(growth of seedlings by) 288, 1942, (rooting of cuttings by) 1754; competition for 1066, 1896; ecological rôle 958, 1894, 2865-6; measurement 1721, 2866; relative illumination 2866; *see also* Photoperiod
Lignasan **429**
Lignification **1181**
Lignin: biological degradation **1199–1200**, **2051**; chemistry **377–82**, **1175**, **1180–7**, **2040–1**, **3029–34**; determination **379**; extraction **502–3**, **1183–5**; formation **1181**; from decayed wood **380**, **1182**, **3030**; function **1180**; thiolignins **1185–6**; ultra-violet spectroscopy **378**; uses **504**—(plastics) **552**, (soil improver) **1317**
Limestone, spp. suitable to 1873
Liming 678, 2628–9, 2634, 2919
Line thinning 1970, 2938–9
Litter: amount produced by certain spp. 2572, 2623; decomposition 64, 71, 928–9, 1730–1, 2618, 2620–2; effects of removal 2624
Littleleaf disease 2461, 3410
Loading: machinery **440–1**, **1234-7**; time studies **3091**
Locusts 2813
Logging **406–41**, **1143**, **1211–37**, **2065–98**, **3069–106**; camps **2075**; damage 2460, 3469; effects on water 2645; equipment (other than saws) **414**, **1214**, **1216**, **1218**, **2067–8**, **3073**; glossary **2065**; mechanized **430–7**, **2069–73**, **3074–6**, **3090**, (effects on natural regeneration) **2088**, 2867–8, **3099**; 'prelogging' **2076**; pulpwood **418–9**, **513**; rates of pay **3072**; time studies **415–9**, **2077**, **3071**; *see also* Saws, logging
Logs *see* Grading, Scaling, Storage, etc.
Lumber *see* Timber
Lupin as soil improver 678, 2629, 2864
Lyctus *see* Borers and Preservation, wood

MANAGEMENT, forest 825–47, 1635–41
Mangroves: charcoal **1412**; coppice 2494; financial returns p. 400; soils 2642
Manures *see* Fertilizers
Mapping 2521–2; from air photos 830–2; soils 832, 1732, 2741; vegetation types 993–4, 2524, 2741
Marine borers *see* Preservation, wood
Marking 247–8; costs **408**; tools 788
Match manufacture **461**
Maturity, sexual 100, 1764, 1920, 2665–7
Medicinal plants 193, **637–47**, **1464**, **1475–91**, **2233–42**, **3272–91**; *see also* Alkaloids, Vitamins, etc.
Mensuration, forest 788–824, 1622–34, 2465–515, 3473–510, (instruments for) pp. 261–9
Mice: control 743; damage 277, 743, (to seed) 744; *see also* Rodents
Microclimate 2416–7; *see also* Forest influences, Shelterbelts
Mine timbers: dimensions **609**; economy in use of **610**; plantations 1907; preservative treatment **583–5**; statistics **611–3**
Minor forest products **634–59**, **1453–1527**, **2227–73**, **3263–3314**
Mistletoe 2332–4, 3368–9
Mites 2456, 2814, 3443
Mixtures 1063–8, 1103, 1898, 1957, 2493, 2504, 2853, 2864; *see also* Nurses, Underplanting, etc.
Moisture requirements 1667
Moisture, wood: and cost of transport **1225**; bibliography **2021**; effect on withdrawal resistance of nails **1536**; hygroscopicity **369**; in living trees **1168**, 2655, **3067–8**; measurement by weighing **3001**; meters **370**, **2023–4**, **3002**, p. 136; seasonal variation **3003**
Molasses, wood: feeding trials **1419–20**
Monoculture *see* Pure crops
Montane forest, choice of systems for 2847
Moose 1869
Morphology 129-39, 975–82, 1772–83, 2701–11
Moss: nutrient consumption 2652–3; removal to assist regeneration 1824; sphagnum as seedbed mulch 292
Mulching 290–2, 1092, 1944–5, 2898, 2917, 3346
Muskeg 172
Mycorrhiza 59–60, 927, 1728–9, 1895, 2614–6, 2845, 2857; necessary for Oak on steppes 322, 1119, 1121; promoted by fertilizers 2633

NAIL-holding properties **2215**, **3016**
Nails **1245**, **1428–9**, **1536**, **2277–8**, **3317–8**, (wooden) **2222**
National parks 876, 1646, 1650
Nature conservation 873–5, 1648, 2542–6, 3548–50
Naval stores *see* Resin, Turpentine
Needles: anatomy 133, 1781; diagnostic value of colour 1895; oil **1500**; osmotic pressure of cell sap 99, 119; quality and age of tree 1780; *see also* Foliage, Leaf
Nematodes 785, 2457, 3468
Nesting boxes 1586, 2388–9
Nicotine, growth-regulating properties p. 400
Nitrogen: cycle, effect of DDT on 3421; fixation by insects 1035; metabolism 679
Nomenclature: botanical, international rules 1008; trees and timbers (common names) **342**, 897–900, 992, **1137–42**, 1663, 1795, 1849, **1993**, 2573, 2728; *see also* Standard names
Nuodex **588**
Nun moth 1614–5, 2444–9, 3459
Nurse and auxiliary spp. 1101, 1964–6
Nurseries and nursery practice 284–92, 1063, 1091–7, 1942–9, 2912–20; insect pests 3443, *see also* Chafer control; inspection 1094;

mechanization 1949, 2913; seed-bed (covers) 290, 1943, (shading) 1092; soil treatment 291–2, 1091–3, 1944–6, 2340, 2918–20; sowings 289, 1086, 2914, 2917, (season) 1093; transplanting 284, 1096–7, 2915–6; use of artificial light 288; watering 1091; weed control 1092, pp. 139–43; *see also* Damping-off, Mulching, Planting stock, Seed treatment
Nutrients, plant 1667; requirements 1895; reserves, effect of pruning on 1992; *see also* Deficiency, Soils

Oils **654–6, 1500–12, 2253–4, 3300–6**; bark **654, 1508**; essential **656, 1501–7, 2253, 3302–4**; needle **1500**; seed **1510, 2254, 3305–6**; tapping for **3300**; *see also* Fats, Tall oil
Opossums 1584
Ornamental, street and roadside trees 294–5, 1098–9, p. 399; diseases 2463; injured by drip from telephone wires 3347; *see also* Arboriculture
Osier-growing 301
Osmotite **584**
Ownership, determination of 828

Packing containers **615–6, 1426–8, 2213–4, 3249**; bluestain infects eggs **1201**
Paint-holding capacity of wood **1353**
Paints and painting **1354–6, 3195, 3251**
Palaeoecology 24–7, 140, 911, 1692–5, 2580–5; *see also* Fossil tree spp.
Palms, edible **3291**
Parthenogenesis 105
Pathology: bibliography **671**; research 703, 1564, 3370; textbooks 670, 692, 786, 1538, 2289–90, 2335–6; *see also* Fungus diseases
Peat: effect of drainage on **3335**; use as fertilizer 2628
Peatland 2640; *see also* Afforestation
Pencil manufacture **1436**
Pentoxol **2181**
Permatox **2181**
Phenology **965**; cambial activity 1900; flowering 106, 1051, 1053–4, 1913, 2843, p. 134; leaf-fall 1052; research methods 1899; root growth 2845; seed production 267, 1075, 1913, 1920–1, 2862; vegetative cycle 243–4, 2844, 2846
Phloem necrosis 738, 2431
Phosphorus uptake by mycorrhizal roots 59, 2616
Photogrammetry *see* Surveys, aerial
Photography: in forest stands 8; of bark 2711; use in mill studies **1311**
Photoperiod 1900, 2837
Photosynthesis 1667
Phyllotaxy 1779
Physiology, plant: annual review 1667; chlorophyll synthesis 948; effect of temperature on 97–8; enzyme activity 1752; sieve-tube system 2658; suction force in Pine needles 2656; *see also* Growth regulating substances, Respiration, Transpiration, etc.
Piles *see* Preservation and Preservative-treated wood
Pitprops *see* Mine timbers
Planing machinery **496, 2140, 2151, 3175**
Plantations: for mining timber 1907; rate of growth 1630; *see also* Afforestation
Planting: machines 280–2, 1089, 1917, 2904–6; methods—(flat-rooted) 2630–1, (in baskets) 289, 1112, (in furrows) 301, (in holes with covers) 299, (in trenches) 265, 299; season 298, 2908–9; stock — (cuttings) 1940, 2927, (grading) 278, (handling) 2913, (seedling) 301, 1105, 1947–8, 2927, (setts) 301, 2911, (size) 1089, 2864, (storage) 2910, (stumps) 279, 1941, (treatment to prevent transpiration) 2903, (wilding) 1088, 2951; *vs.* direct sowing 1101, 1938
Plastic flowerpots p. 256
Plastics **552–3**, p. 257
Ploughing 264
Ploughs 1078–9, 1918–9, 2878
Plywood **462–80, 1263–97, 2115–36, 3137–61**; boats **2217**; cold-pressed **3141**; core stock **1273–4, 3144–5**; cross bands **3143**; deflection **2121**; frequency of vibration **2121**; furniture **475, 1295**; grading **3146**; hot-pressing **3142**; measurement of moisture **370**; moulding **1267–8, 1293**; preservative treatment **1385–6**; railway goods wagons **2218**; silo **2275**; softwood **3140**; standard specifications **1275**; stiffeners **1278**; surface splitting **2122**; use in concrete construction **2274**; *see also* Glues and gluing, Laminated wood, Strength, Veneer
Poisoning of trees 117–8, 313–5, 1057, 2944–5; effect of time of day 1118; to facilitate barking; *see also* Weed killers
Poisonous spp. 94, **657, 1522, 2234, 3273**
Pole blight 787
Poles: seasoning **1396**; transmission **2212**; *see also* Preservation
Policy *see* Geographical Index
Pollarding 2851
Pollen: chemical constitution 90–1; cyto-morphological studies 136, 139, 978–82, 2708–9; differential deposition and floating 2581; dissemination 101–2; germination *in vitro* 103; measurement of quantities in air 1722; *see also* Palaeoecology
Pollination: artificial 120, 962, 2684; controlled 124, 2682–5
Polyploids: induced 114, 970, 2695; natural 971, 2695, 2698
Posts *see* Preservation
Powder-post beetle **402, 595, 1205, 2187–9, 3056–7, 3206**
Power-line rights of way: control of vegetation on 695; lay-out 3557
Precipitation 958, 2602–3; *see also* Dendrochronology, Forest influences, Rainfall
Preservation of: cross arms **1362**; fence posts **586–7, 1389–92, 2196**; fruit boxes **588, 3217**; logs **428–9**; mining timber **583–5, 2191**; piles **2197**; plywood **1385–6**; poles **1361–3, 2192–5, 3211–3**; pulp **536–7**; refractory heartwood **1364**; sleepers **1387, 3210–11**; veneer **3209**
Preservation, wood **558–88, 1360–92, 2176–91, 3197–3217**; against—(ambrosia beetles) **1221–4, 3086**, (borers) **573, 1379, 1380, 1385, 2186, 3086**, (dry rot) **571–2, 3214**, (marine borers) **1378, 3214–6**, (powder-post beetles) **2187–9, 3206**, (stain fungi) **429, 570, 1221, 1357, 2182, 3208**, (termites) **576–82, 1380–4, 2184–5**; dielectric pretreatment **1367**; end-coatings **1366**; loss in strength of solutions **1377**; statistics **558, 583–4**; testing —(penetration) **1365, 2180**, (toxicity) **1381, 2181, 2183**
Preservative-treated wood: calculation of life **3198**; for floors **1362** in marine structures **1362, 1388**; in mines **583–5**; inflammability **584, 1388**
Preservatives, wood: application—(anti-blooming agents) **566**, (apparatus) **1224**, (boiling) **1368**, (boucherie) **3212**, (brushing) **1392, 3207**, (diffusion) **2190, 3204**, (dip) **570, 1392, 3209**, (emulsions *vs.* solutions) **2186, 3086**, (incising) **2177**; (injection) **3207**, (Kyan) **2194**, (open-tank) **3211**, (osmotic) **2194**, (pressure) **2194, 3204**, (sap-displacement) **2194**, (soaking) **1389**, (to poles *in situ*) **2193**; arsenical **429, 1382–4, 2179, 3201–3**; benzene hexachlorocyclohexane (BHC) **576–7, 1223, 1370, 1383, 1385, 2186–9, 3086**; Boliden salts **2179, 3201**; borax **1382**; Bordeaux mixture **429**; boric acid **1385, 2189–90**; Borlac **1382**; bridging agents **566**; butanol **564**; Cashew-nut shell oil **1374**; Chlordane **577–8, 1380**; coal-tar **563, 3210**; creosote **561–2, 1371, 1388, 2177, 2197, 3215**; Cryptogil **1224**; Cu compounds **567, 3207, 3212**; DDT **575–7, 1370, 1385, 2185, 2187–9, 3207**; Dowicide **3208**; 'E605' **2187**; evaluation **1371–5**; evaporation **3203**; fluorides **574, 3200**; Gammexane *see* BHC; hydrobenzoic acids **565**; hydrocarbon oils **560**; Impregna-Tox **3208**; iron-ore roasting residues **2193**; leaching **3203**; Lignasan **429**; Nuodex **588**; oils **560, 3203, 3215**; Osmotite **584**; pentachlorophenates **566–7, 1373, 1383, 1385, 1390, 2181, 2187–8, 2195–6, 3206**, p. 559; Pentoxol **2181**; Permatox **2181**; polyhalogenated phenols **2178**; Rentokil **1382**; Residu **3203**; Ressex **3203**; sulphates **568, 1383**; Tanalith **3201, 3208**; tar oil **564**; Toxaphene **577**; urea **2177**; Wood-; life, p. 559; Zn compounds **584–5**; **'666'** *see* benzene hexachlorocyclohexane
Private forestry 826; *see also* Co-operatives, Farm woodlands, and Geographical Index

Processionary moths 767–8, 3463–4
Propagation, vegetative 107–11, 952–5, 1092, 1753–9, 2668–76; cuttings 107–10, 952–4, 1753–8, 2668–71, 2926, p. 255, (and age of tree) 2668–9, (in artificial light) 1754, (in different media) 108, 1753, 1755, (leaf-bud) 952, 1758, (standard designations) 953, (watering) 1753; grafting 955, 960, 1759, 2672–3; layering 250, 2674–6; root cuttings 2671; *see also* Growth-regulating substances
Protection, forest: International Plant Protection Convention 2291; use of chemotherapeutants 3336; *see also* Fire, Fungus diseases, Insect pests, etc.
Provenance trials 118, 963–7, 1762, 2690–3; *see also* Species Index
Pruning 324–7, 1124–6, 1975, 1992, 2956–60; bud pruning 1124; costs 2959; effect on—(biochemical processes) 1992, (frost injury) 2459, (increment) 326, 2957, (sp. gr. of wood) 327, 2957, (taper) 327, 2957; in snow p. 135; returns from pruned branches 2960; tools 325, 2956; wound healing 329, 2958; *see also* Branch suppression, Wound dressings
Pulp: bleachability **2161**; effect of—(age of tree) **531**, (decay) **518–9, 2162**, (fibre length) **1338–9, 2163**, (growth rate) **531, 1339, 2162**, (moisture of wood) **2165**, (sp. gr. of wood) **1322, 2164**; groundwood **1319**; hardwood **528–9, 1335–9, 2163, 3181–4**; lignin content, determination of **2161**; mechanical *see* groundwood; moisture content **1342**; preservative treatment **536–7**; semi-chemical **525–8, 3181**; sulphate **520–2, 1326–35**, (yield) **2164**; sulphite **1323, 2161**; textile **554–6**
Pulp and paper statistics **512, 2155–7**
Pulping: bark **533**; chipping **2160, 3185**; dead wood **532**; hardwoods **514–5, 1336**; mechanical—(grinders and grinding) **522, 1336, 2158**, (pre-treatment) **524**, (screening) **2159**; nitration **556**; refining of rejects **523**; resinous wood **2167**; semi-chemical **525–8, 1321–2, 3180**; sodium hydroxide **1320, 3186**; sulphate **530, 1334–5, 3184**; sulphite **534–5**; tri-ethylene glycol p. 559; veneer waste **3184**; *see also* Waste liquors
Pulpwood: assessment of quality **520**; barking **418–21, 1220, 2081**; loading **440**; logging **418–9, 513**; storage **1220**; transport **431, 436, 1230, 1232**; *see also* Pulping, *and* Geographical and Species Indexes
Punched cards *see* Card-sorting methods
Pure crops 68, 2574, 2856

QUARANTINE regulations 2336

RABBITS: bionomics 1871; damage 277, 3269; fencing against 3415–6; repellents 1984, 2370; *see also* Rodents
Races, physiological 117, 960, 1504, 1767, 2693, **3301**
Radiation, biological effects 50, 2605
Radio communications 838, p. 557
Rafting *see* Floating
Rain forest: climatic limits 1797–8; natural regeneration 257
Rainfall: correlation with increment 1891, 2498–500; measurement 1720; *see also* Aridity, Forest influences, Precipitation
Range-finders 2507
Reaction wood *see* Compression wood and Tension wood
Ready reckoners **1315**, 3474
Recreation, use of the forest for 877, 3545
Red heart **3067–8, 3210**
Regeneration: site preparation 1685, 1824, (disking) 264, 1079, (opening of canopy) 1057–8, (removal of fern) 1912, (scarification) 254, 274, 2876–8, *see also* slash disposal; surveys 305, 1114; *see also* Burning, Cultivation, etc.
Regeneration, artificial: economics 1642; *see also* Nursery practice, Planting, Direct sowing
Regeneration, natural 249–61, 1070–5, 1909–14, 2854–68; classification 66–73; effect of—(altitude) 2861, (brush) 3359, (logging methods) **2088, 2867–8, 3099**, (relative illumination) 1866, (seedbed conditions) 2860, (slash disposal) 251; gley horizons 68–71; layering 250; light demanders 2865; pulpwood stands 249; on bomb sites p. 134; on fallen logs and stumps 65, 2857; tropical rain forest 257; *see also* Burning, Competition, Light, etc., and Species Index
Relascope 2483
Release cuttings 312, 1116, 1976–8, 2866, 2945
Rentokil **1382**
Repellents 742, 1984, 2370, 3412
Reproduction: dispersal mechanisms 951; *see also* Propagation, Regeneration, etc.
Residu **3203**
Resin: distillation **650–4, 3293**; natural **2243, 3292**; prices and costs **653**
Resin flow and bark-beetle attack 762
Resin tapping **648–50, 1492–9, 2244–7, 3294–9**; bibliography **1492**; effect on wood **1498, 3297–9**; stimulation **649, 3294–6**; tools **1494–5, 2248, 3297–8**, p. 401; width of face **2247**
Resinwood **546**
Resonance wood **2035**
Respiration 1667, (bark) 2659, (roots) 2660–2
Ressex **3203**
Rifle grenades, insecticidal 3437
Rings, growth: counting and measurement 2495–6, 3493, 3501; for elucidating — (fire history) 3354, (glacier movements) 3499; formation 244, **1154, 2014, 2992–4**; *see also* Dendrochronology
Roads and road-building **667–9**, 1685, **2279–83, 3327–31**; costs **667–8, 3330**; ice and snow roads **669, 2283, 3331**; machinery **668, 2279, 2282, 3329**; maintenance **667–9, 2281–2**; system and skidding costs 3537
Rodents: control 273, 2371–3; *see also* Mice, Rabbits, etc.
Roof construction **3320–1**; *see also* Buildings
Root(s): adventitious 1778, 2702; apical meristems 2701; competition 1896; diseases 709–13, 1571, 2343–5; distribution in soil horizons 71, 1898; effect of growth substances 109, 1097, 2916; grafts 3388–9; growth cycle 2845; method of investigating 1777; pruning 2669; regeneration 2915; respiration and transpiration 2660–2; reversal of polarity on cuttings 110; *see also* Mycorrhiza
Root Rake 2877
Rope from bark **3313**
Rot *see* Decay
Rot fungi **380**; **394–9, 571, 1195–1201**, 1767, **2056–7**, 2766–7, 2770, **3050–1**; enzymes **395–6**, lignin-destroying **1199–1200, 2051**; means of infection **3212**; moisture requirements **398, 3220**; nutrient requirements **399**; physiology **394**
Rotation 2525
Royalty, calculation of **2273**
Run-off *see* Infiltration
Rust diseases 717, 732, 2354–7, 3397–8; *see also* Blister rust

SACCHARIFICATION *see* Hydrolysis
Safety devices: in handling timber **2103**; on power saws **411, 494, 2072**
Saline soils 119, 302
Salt resistance 96, 1958
Sample-plot methods 1899, 2482
Sampling methods 3, 114, 2484, 3488–9, (insect populations) 2805
Sand: afforestation 300–1, 930, 1104, 1957–8, 2618, 2925; artificial dunes 1958; fixation 76, 316, 1743, 2599, 2926–7
Sanding machines **3134**; use of waste for plastics p. 257
Sap: chemical constitution **1179**, 2657; hydrogen-ion concentration 2651; pressure 95, 99
Savanna 1963
Sawdust *see* Waste wood
Sawflies 213–4, 1610–11, 2434–6, 3450–4
Sawmilling **482–501, 1299–1315, 2137–51, 3162–78**; flat sawing **2147**; frozen logs **2142**; mill studies **499–501, 1311–3, 1536, 3170–1, 3177–8**; power consumption **3170**; refractory timbers **3173**; small timber **1312, 2145**; tropical timbers **1299**; waste **1313, 2148–50**
Sawmills: equipment **482–4, 1310–4**; 'Hydramagic' **485**; lay-out and design **1300**; location **3162, 3164**; log turners **3167**; pond sawdust eliminators **497, 1314**; portable **2146, 3166**; timber conveyors **1301, 2138, 3168–9**

Saws, logging: maintenance **412–3, 2079**; power **410–2, 2067, 3075–6**
Saws, milling **486, 1304**; band **491–3, 2143**; circular **487–91, 1305–9, 2144–5, 3171–2**, (maintenance) **1308**; design **2141**; Duo-kerf **1302**; edgers **2146**; frame **1303**; gang **1305, 2145**; guards **494**; steels used for **2139**; testing **1309**
Scale insects 775-6, 1606-7, 2428, 3448–9, (for weed control) 1563, 2321–2
Scaling *see* Timber measurement
Scarification *see* Regeneration: site preparation
Scrub, conversion to forest 2877
Seasonal variation in—(chemical constituents of bark) 947, (germination of seeds) 2889, (water content of trees) **1168**, 2655; *see also* Phenology
Seasoning **459, 591–5, 1395–1409, 2198–2206, 3219–3232**; 'centrifugal' p. 135; chemical **593, 595, 3231–2**; collapse **1399**; combined air and kiln **1397–8**; cooperage wood **3223**; dielectric **593–4, 1408, 3229**; effect of wood thickness **591**; effect on rot fungi **3220**; furniture **592, 2206**; high-frequency *see* dielectric; infra-red **2203, 3230**; kiln **593, 1400, 2198, 3222–8**, (low temperature) **2200**; kilns **459, 593, 3226**, p. 257, (circulation in) **1405**, (gas-fired) **1403–4, 2199**, (thermometers) **1406**; moisture determination **592, 3011**; poles **1396**; pre-treatment **2126, 2177**; protection in sheds **2187, 2195**; radio-frequency *see* dielectric; swinging **2202**; vacuum **2201**; vapour **1409**; veneer **1269–70, 2118, 3138**; with alternate heating and cooling elements **1407, 2201**
Second-growth stands **403, 1208**, 1629, **3013–4**
Secondary jungle 2635
Seed: cleaning 1927; collection 266, 1080, 1924, 2883–5; de-winging 2886; disinfection 1063; dispersal 253, 1075, 1922–3; dormancy 1930, 1932; extraction 1926, 2883, (kilns) 268, 1081; fats **1513**; germination 2887, (factors affecting) 272, 1075, 2329, 2633, 2855, (seasonal variation) 2889; moisture content 1084–5, 1931; morphology 2710; oils **1510, 2254, 3305–6**; pelleted 273, 1936; pests 2437, **3308**; pre-germination 234; production 1075, 1913, 1920–1, 2862, 2882–3, (and age of tree) 1920, (forecasting) 267, (strangulation to hasten) p. 400; standards 2880; storage 270–1, 1082–3, 1119, 1925, 1927–30, 1932, 1989, 2883, 2887–9; testing 2894–5; trade 2879–80; traps 2851; treatment 1084, 1930, 2887, (chemical) **634**, 2890, 2893, (removal of coat) 1929, (soaking) 1929, 1932, 2889, 2893, 2917, (stratification) 233–4, 1931, 2893, (with growth substances) 1933, 2891–2
Seed-trees 1071, 1075, 2860–2, 2882
Seedlings: grading 278; planting stock 1947
Selection forest: determination of state of equilibrium 817; standardization 818
Selective cutting 246–8, 1059–60, 1092–5, 2847–8
Sex 2665–7; change in dioecious trees 950; distribution of male and female branches 2665; in *Casuarina* 949
Shade trees 1113, 1876
Shelterbelts 316–23, 1104, 1119–23, 1979–91, 2946–55; disadvantages 1893, 2948–9; for orchards 1123, 1982; general silviculture 316, 318–9, 1979–80; influence on—(climate) 323, (crop yields) 316, 323, (Soil moisture) 323; lay-out 1981; patch or 'nest' sowing 321, 1119–21, 1987–9, 2954–5; soil surveys 193–5; spacing 316–7; species for 316, 320, 1123, 1984, 1990–2949
Shelterwood systems 257
Shifting cultivation 937, 2599, 3566; effect on soil microflora 2613
Shingles: use of mill waste **3190**
Ships *see* Boats
Shoot growth 100, 137, 243, 956, 958, 975, 2703, 2837, 2844
Shrinkage and swelling of wood **403, 1165–6, 1209, 2019, 2025, 2997, 3004**; *see also* Diameter
Sieve tubes 2658
Silver content of trees **1194**
Site quality 1638–9, 2605, 3525–7; and Ca content of foliage 2838; classification 2526–30; indicator species 2626, 2632; moisture index 277; relation to wood quality **403, 2038**
Skidding: combined with bunching **1227**; costs **667, 3537**; injury, prevention of 3469; tractor **1226, 2087, 3092, 3099**; tractor and sledge **3093–8**; *see also* Cableways
Slash disposal 251, 2624
Sledges **1228, 2091, 3091, 3093–8**
Sleepers **2211**; causes of failure **3246–7**; statistics **1424–5**; suitable spp. **1424, 2005, 3245**; testing **614**; uses for worn sleepers **3248**
Snow: damage 2938, 3342; drifting, induced 940; investigation programme 87; storage 1741
'Snowmobile' **3092**
Soil(s): aeration 678, 1727; C/N ratio 1730; calcareous 72, 984, 1735, 1804; chemistry 57, 925–6, 1730, 2609; classification 66–72, 933–7, 2638–42; conservation 74–85, 1744, 2647–9; degradation 1805, 2637; effect of—(afforestation) 930, 2618–9, 2636, (deer droppings) 1733, (flooding) 2298, (stand composition) 68, 931, 1731, 1737, (wind) 921; evapotranspiration 1738; evolution 1735, 2625, 2636, 2639; fauna 931, 1731, 2617–20, (separation from soil) 61, 932; freezing 55, 2608; gley 68, 71; improvers 291, 1093, 1101, 1317, 1945, 1956, 2864, **3122–3**, p. 254; mapping 1732, 2741; microbiology 58, 927–31, 2344, 2610–6, 2633, 2856, 3421; moisture 58, 678, 924, 1737, (condensation and evaporation) 923, (under different vegetation types) 171; nutrients 67, 70, 925–6, 2640, 2652; organic matter 928, 1730, 1736, 2635; parent rock 989, 1735, 2625; peat 69; permeability 56, 1737; pH 1808, (effect of shade trees) 1113, (effect on Dutch Elm Disease 3394; podzolization 67–8, 1736, 1804–5; quality assessed by analysis of foliage 2626; R factor 58; regeneration 2636; research techniques 922; rooting space 2462, 3343–5; stabilization 75–7; structure 2635; temperature 54–5, 58; textbooks 1723–4, 1726; texture 1736, 3525; tropical 62, 2617, 2635; types (*see also* Classification) 1736, (indicated by vegetation) 73, 177, 1805; wet, 71, 2641–2
'Sour felling' **407, 415**
Sowing *see* Direct sowing, Nurseries
Spacing 283, 1090, 1940, 2907, 3527
Specific gravity of wood **403, 1232, 1323, 1336, 2164, 3012, 3503**; correlation with—(age of tree) **2018**, (growth rate) **403, 1208, 2016–7, 3013, 3065**, (position in tree) **1167–8**, (stem form) **3481**; effect of pruning 327, 2957; effect on—(pulp quality and yield) **1323, 2164**, (stress grading) **3262**
Spittlebugs 2427
Spoil mounds: succession on 1822–3; *see also* Afforestation
Sprayers 672–4, 737, 767, 2360, 2382–4, 3337
Sprouting *see* Coppicing
Squirrels: control of *Adelges* by 2390; damage 1585, 2366–8, 3414
Stacking logs **2182**
Stain **1201, 3052–4, 3219, 3224**; protection against **429, 570, 1221, 1375–7, 2182, 3208**
Stand: composition 2513–4, 2532–3, (effect on soil) 931, 1731; development 307, 1628–9; mortality 3506; structure 819–20, 2852, 3505
Standard names **1137–42, 1999**
Standards: American **3260**; building materials **2224**; grading rules **623, 625–32, 1441–50, 2225–6, 3261–2**; plywood **1275**; Polish **3259**; timber testing **1163–4**
Starch: determination **3207**
Statistical method: in India 3–4; textbook 894
Statistics, forest 28–31, 1696–1702, 2587–95
Steaming **2207**
Stem growth and form 2505, 2852
Steppe climate 2763
Storage: of—(logs) **427–9, 1220–4, 2086, 2182, 3086**, (lumber) **633, 1451–2**; ponds, p. 559
Strangulation p. 400
Streamflow: used to forecast fire danger 686; *see* also Forest influences
Street trees *see* Ornamental trees

Strength of—(fibreboards) **541, 550–1, 2174, 3191–2,** (improved wood) **1279–80,** (laminated wood structures) **466, 3148,** (sandwich materials) **467–9, 3149**
Strength, wood: **337–9, 372–5, 1143–4; 1169–74, 2031–8, 2973, 3006–16;** effects of—(age of tree) **2018,** (geological formation) **2017),** (growth rate) **2017, 2998, 3012,** (site) **403, 2038, 2998;** second-growth Douglas Fir **403, 1208, 3013–4;** testing **372, 374, 1130, 1163–4, 1171–3, 2033–4, 2997, 3007–10**
Stress-grading **631, 1169–70, 1173, 1440**
Strip-mined land *see* Afforestation
Strip surveys *see* Enumeration surveys
Stump(s): counts for estimation of depletion p. 136; moisture content 65; regeneration on 65; removal **3084**
Stumpage 2535
Stumpwood: source of rosin, etc., **426**
Suberization 1776
Succession 1822–4, 1986, 2764–5; effect on animal populations 1869–70; post-glacial 2572
Sulky **3095**
Sun-spots and growth-rings 3495
Surveying 1624, 1635; area computation 3523–4
Surveys, aerial 829–37, 1636, 3520–4; estimation of tree height 834; identification of species 835–6; indication of minerals in soil from tree foliage pp. 400–1; photo interpretation 833–7, 1636, 2523; use of colour photography 837
Surveys, forest 1624, 2484–7; methods 305; use of punched cards 2488
Sustained yield *see* Yield regulation
Swamps 251

TALL oil **508–11, 1318, 1333**
Tannins **1458–9, 2006;** extraction from—(Oak slabs) **1469,** (seawater floated bark) **1462–3**
Tanstuffs: American resources **1464;** bark—(Douglas Fir) **1461,** (Eucalypt) **636, 1468,** (Hemlock) **1465,** (Maple) **1465,** (Pines) **1458–9,** (Spruces) **1460, 1465, 2230,** (Wattle) **635, 1466–7, 2231, 3265;** Bulgarian **2229;** Indian **1471–2;** insect pests **3268;** leaves—(*Lithraea molleoides*) **3267,** (Sumac) **634, 1470;** Oak slabs **1469;** seeds of *Acacia arabica* **3266;** valonia **2228;** Wallaba wood **2006**
Taper: curves 1623; effects of pruning 327, 2957; methods of measuring pp. 265–8; tables 3480; *see also* Form, stem
Taungya 1907
Taxation, forest 889, 2552–3, 3562
Television, use in firefighting p. 254
Temperature: accumulated 1797, **3100;** effect on—(assimilation and respiration) 97, (increment) 2501, 3494, (soil micro-organisms) 58, (transpiration) 98, (vegetation types) 2757; *see also* Frost
Tension wood **1210**
Tent caterpillar 1037, 2440, (temperature inside tents) 1850
Termites 215, 2061–3; associated fungi pp. 255–6; in soils and living vegetation 241, 2617, pp. 3–8; resistant species **1382, 1384, 2061–2, 3060;** *see also* Preservation, wood
Textile: fibres **2261,** p. **399;** pulps **554–5,** p. 255
Thermal properties of wood **366**
Thinning(s) 308–11, 1073, 1685, 1969–75, 2515, 2938–43; effect on—(fungus disease) 2941, (glaze damage) 2299, (snow damage) 2938, (volume increment) 2491, 2941; milling **3109;** physiological basis 99; soil tests to show need for 928; with winch and cable 1970, 2938–9; yields 2507, 2941
Ties *see* Sleepers
Timber: measurement 795–7, 2467, 2475, 3483–4, 3490; trade **660–4, 2262–73, 3315–6**
Timberlines 1807, 2576, 2731, 2733, 2739, 2745
Timberyards: lay-out **633, 1452**
Time studies: cleaning 2936; hauling **3090–9;** logging **415–9, 3071;** spraying 2395
Tools, wooden **2038**
Toxaphene **577**
Toys **3255**
Tractors **436–7, 2087, 3094,** p. 557; (cause of forest fires) 682; *vs.* horses 2876
Transpiration 1749–51, 2663; bark 2659; differences in 'blue' and 'green' Spruce 117; effect of—(flooding) 2297, (leaf temperature) 98; measurement 1748, 1750; root 2661–2
Transport of logs and timber **430–41, 1225–37, 2087–98, 3087–106;** costs **665, 1225;** *see also* Floating, Hauling, Skidding, Sledges, Tractors, etc.
Tree classes 247, 2842, 2848, 2530–1
Tree-lifting machines 296, 1949, 2913
Tree surgery 1126
Trifoblock 2324
Tropical forests: cruising 805; logging methods **2071, 2088,** 2867–8, **3090;** management 846; regeneration 2867; research 905; resources 879; yield 2506; *see also* Rain forest, Soil(s)
Tropical hardwoods: chemistry **1175;** gluing **2127;** properties and uses **336–40, 346–51, 1131–5, 1998–2005, 2964–75;** pulping **514–5;** sawing **1299;** sleepers **3245**
Tropisms 1667
Tsetse control 2327
Turpentines **1496–7, 2249–51**
Turpentining *see* Resin-tapping

UNDERPLANTING 303, 1111, 2934–5; *see also* Enrichment of tropical forest

VALUATION of Wattle plantations **635**
'Vegetable ivory' **1519**
Vegetation types 152–78, 993–1007, 1796–1821, 2729–63, pp. 257–8; classification and analysis 1802, 2746; correlation with chemical constituents of foliage 2626; effect of climate on 160–1, 983, 1797, 1801, 2733, 2755, 2759; influence of soils on 171, 983, 1803–6; representation on maps 993–4, 2741; *see also* Geographical Index
Veneer: clippers **465;** drying **2118, 3138–9;** edge-to-edge splicing **477–8;** improved wood **1280;** jointing **476;** logs **3137;** preservative treatment **3209;** rotary cutting **464;** slicing **2117, 3138;** waste **542, 3184;** woods for **1269–70, 2115–6**
Vermiculite, use to insulate kilns, p. 257
Virgin forest 1819; reserves 1649; soils 2635; structure and development 819–20
Virus diseases: of insects 1691, 1853–4, 2436, 2444; of trees 738, 1581, 2364–5, 2431
Vitamins **647, 1488–9, 2242, 3282–5**
Volume calculation 1624, from—(air photos) 3482, (basal area) 2480–1, (formulae) 792–4, 803, (nomograms) 3484, (sample tree) 803–4, (tables) 797–802, 1626, 2468–80, 2505, 2507, 3485–7; *see also* Increment

WAGES **3071–2**
Wallboard *see* Fibreboard
Waste liquors (chemical wood industries): sulphate **507;** sulphite—(alcohol from) 600, (bibliography) **2153,** (evaporation) **505–6, 2154**
Waste wood: solid content and piled weight **448;** utilization **449, 2104, 2150, 3118,** (activated carbon) **3237,** (boiler fuel) **1239, 1246–8, 3118–20,** p. 398, (briquettes) **1414–6, 3120,** (chemical) **3116,** (concrete blocks) **3121,** (litter) **1249–50,** (plastics) p. 257, (pulp) **3117, 3184,** (soil improver) 291, 1093, **1317,** 1945, **3122–3,** p. 254, (tanstuffs) **1469;** *see also* Alcohol, Fibreboard, Lignin, Pulp
Water: conservation 938–41; content of living trees 2655; utilization by vegetation 1737, 2643
Water-table 71, 3471
Watering *see* Nurseries and nursery practice
Waterproofing of wood **1996**
Watershed *see* Catchment
Waxes **1457**
Weathering **3063–4**
Webworms 1037
Wedges **1216, 2078**
Weed killers 1667, pp. 139–43; Ammate *see* ammonium sulphamate; ammonium sulphamate 696, 3362–3, 3365, (costs) 1557; application 696–8, 1558, 2324, 3364; evaluation 2323; Fekabit 2324; growth regulating substances—(2, 4-D) 697–700, 1558–61, 2324–31, 3361–6, (2, 4, 5-T) 1558–9, 1562, 2327, 3362, 3364–5, (costs) 2326, (movement in soil) 3364–5, (TCA) 3365–7; Trifoblock 2324; *see* also Poisoning

Weed trees and shrubs: control 694, 1558, 1685, (biological) 700–2, 1563, 2321–2, (chemical) 694–700, 1557–62, 2323–31, (from air) 2327, (mechanical) 1558, 1562; *see also* Poisoning
Weeds 2319, 2902; control—(mechanical) 1115, 1940, 3360, (silvicultural) 2318, 3527; *see also* Nurseries
Weevils 1592–5, 1859, 2392–7, **3058–9**, 3430–3
Wej-Weld construction 1533
Wetting agents *see* Fire fighting
Wetwood **1399**, 2341
Wilding stock 288, 2951
Wildlife management 739–40, 1651–2, 2544–6, 2818–9
Wilt diseases: *Casuarina* 721; Elm 738; Mimosa 2358; Oak 1577–9; Persimmon 722; Poplar p. 255; Sumac 1575
Winches **439, 2087, 3094, 3102**
Wind: damage 248, 675, 1540–1, 3338, 3343; effects on soil 920
Windbreaks *see* Shelterbelts
Window frames **603**
Wood anatomy 139, **352–64, 1145–62, 2007–15, 2978–95**; cellulose structure **1161–2**; cell wall **359–60, 386, 1160, 2986–9**; classification of wood parenchyma **2012**; differentiation of woody elements 129–31, **1152–4**; fibre(s) — (gelatinous) **1159**, (length) **361, 1157, 2013**, (structure) **1158**; heartwood formation **363**; laboratory technique **1145, 2007–8, 2978–9, 2985, 2987**; photometric investigation **2985**; rays **362, 1151, 2991**; tracheid length **2013, 2990**; tyloses **363**; use of—(electron microscope) **1145**, 2987, (fluorescence microscopy) **2007**, (light scattering) **2008**; *see also* Rings, growth
Wood ash **1453**
Wood chemistry **376–92, 529**; cell wall **358, 360, 3017**; extraction **2044–5**; heartwood **390, 392, 1190, 2047, 3036–43**; preparation of samples for analysis **520**; use of nitration methods **556, 1178**; variation with position in tree **392**; *see also* Cellulose, Lignin, Resin, etc.
Wood flour **481**
Wood identification by—(chemical tests) **1146, 2983–4**, (punched cards) **1147**, (tabular keys) **355, 1148, 2009, 2980, 2982**
Wood, properties of **336–405, 1130–1210, 1997–2064, 2962–3068**; *see also* Durability, Electrical and Thermal properties, Moisture, Resin tapping, Specific gravity, Strength, Working qualities, etc. and Species Index
Wood utilization: bibliography **331**; manuals **329–30, 1127, 2962–3**; research programmes and reports **332–5, 1128–9, 1994–6**
Wood wasps 780, 1608–9, 2433
Wood wool **1298**
Woodworking: handbooks **1251–61, 3112**; machinery **443–7, 450–60, 1240–4, 1310, 2106–11, 3113–4, 3125–8**; power consumption **3111**; prevention of accidents **447**
Working plans 847, 1641
Working qualities **2039, 3016**
Wound dressings 1568, 2292–5

XILON **549**

YEAST **602**

Yield 822–3, 1630–2, 1880, 2507–8, 2824, 2937, 3507, 3529–32; calculation 844–5; prediction 2512, 3509; regulation 843–4, 1640, 3529–31; tables 824, 1633–4, 2503–6, 3508–10; thinning 2507, 2534, 2941

GEOGRAPHICAL INDEX

ABYSSINIA: forests 917
Afghanistan: forests 2598
Africa: bibliography of floras 2725; palaeoecology 1695
Alaska: flora 1793; vegetation types 172
Albania: cultivation of Tung p. 398; vegetation types 2745
Algeria: soil conservation 83; vegetation studies 2750
Andaman Is.: exploitation p. 558
Argentina: pulpwood spp. **516**; spp. for Pampas 230; vegetation 1819
Arizona: tree spp. 2726
Asia: fungus flora 180
Assam: flora 1830
Australia: forest bibliography 1660; integrated industries **442**; oils **1504**; palaeoecology 2585
Austria: forest economy 32; vegetation types 2735; veneer industry **1263**

BALUCHISTAN: forests and forestry 1713
Belgian Congo: afforestation 1106; arboretum 22; copal-bearing spp. 1027; exotics 239; flora 145–6, 876, 2785, 2790, 2793, 2803; forest legislation 883; research 2570; soil survey 937; vegetation types 163–6, 1812, (and index of aridity) 1000
Belgium: afforestation 2929; exotics 1879–80; forests 1708; Poplar growing 228; soil and vegetation map 2741; vegetation 2740–1
Bengal, West: forest research 1668
Bihar and Orissa: flora 1790
Bohemia: vegetation types 154
Borneo: flora 1018
Brazil: afforestation 2932; export timbers **342**; flora 1009; forest policy 870; soil formation 2625; vegetation 173–4, 1818, 2763
British Columbia: farm forestry 2556; forest grazing 3568; taxation 2553
British Honduras: forests 1717
British Isles: trees and shrubs 182
Bulgaria: tanstuffs **2229**
Burma: Bamboo for pulp **517**; forest statistics 31; forest types 2748

CALIFORNIA: fire protection 2308; forest law 2549; forest policy 2541; tanstuffs **1464**; vegetation 1007
Cameroun: flora 1792
Canada: Christmas-tree industry **3272**; climate, soils and forests 2755; employment and unemployment 3541; entomological research 747; ethical code for foresters 851; flora 147; forest ownership 2551–2; forest policy 2539–40; forest products **335**, **3107**; forest statistics 1702, 2592; forest trees 222; forestry societies p. 398; forests and forestry 44, 871; palaeoecology 2582–3; silvicultural research 221
Celebes: tree spp. 2728
Central Provinces and Berar: forest administration 1689
Ceylon: forestry problems 1711; forests and forestry 2600
Chile: planting methods 276; vegetation 1820
China: forest law 881; forest trees 991, 1011–3, 1016; forests and forestry 1700; rusts 3397; timber nomenclature **1999**
Colombia: flora 1831
Colorado: soils and vegetation 171
Cyprus: forest policy 867; goat law 882, p. 133
Czechoslovakia: bibliography of geobotany 2736; exotics 226–7; forest history 25; forestry research 16; labour force 861; poplar growing 1887; resin tapping **648**; vegetation types 154–5

DENMARK: forest statistics 1698–9; forestry research 1680; forestry societies 1673; forests and forestry 38, 1707; shelterbelts 2947
Dominica: forest spp. **340**
Dutch Guiana (Surinam): flora 2727; forest resources 47, 1719

EAST AFRICA: research 20; vegetable fibres and flosses **1520**
Ecuador: exotics 240; Forest Department 853; suitable spp. for planting 229; vegetation 175
Europe: forest ownership 2551–2
Europe, Central: broad-leaved trees 2777; ecology 219

FIJI: flora 1017, 1845, 2791; forest policy 3544
Finland: fibreboard industry **3187**; farm forestry 1657; forest fires 3349; forest laws 3553–4; forest ownership 1654; forest statistics 2587; forest taxation 3562; forest union 1677; forestry education 14; forestry research 2569; labour force 857–60, 3539; plywood industry **463**; soil research 1725; state forests 884–5, 2550; timber industry 12; trade with U.S.A. **3316**
France: afforestation 1953; climatic changes 2603; exotics 1047–8, 1883; forest history 1688; forest laws 3552; forest products research **332**; forest statistics 2588; forest taxation 3562; forestry research 17; forests 33–5, 908, 1687, 1709; insect fauna 210; regulation of seed trade 2880; soil conservation 78; soils 2638
French Equatorial Africa: flora 1792; labour supply 864; vegetation studies 2749
French Guiana: flora 149; forest resources 46
French Guinea: forest history 2751
French West Africa: conservation of soils and vegetation 2649; flora 1792; vegetation studies 2749

GABON: flora 188
Gambia: forest policy 2537; vegetation 1811
Georgia: co-operative afforestation p. 559
Germany: bark-beetle control 2406–8; exotics 223; forest history 2574; forestry in 866; forestry research 904; palaeoecology 1693; precipitation 2602; vegetation types 1799
Great Britain *see* United Kingdom
Guadeloupe: flora 149; forest resources 46; forests 178
Guatemala: flora 148

HUNGARY: afforestation 299–300; choice of spp. 2873; erosion 1952; exotics 1046; Poplar growing 228

ICELAND: afforestation p. 558
India: afforestation of waste lands 1959; aromatic plants **1505–6**; education 1679; forest societies 2564; forest statistics 1701; forestry research 1679; insects 1864, 1868; meteorological measurements 1720; nature conservation 874–5; standard nomenclature **1138**; tanstuffs **1471–2**; vegetation types 1808–9
Indiana: forest types 1006
Indo-China: flora 2778; forest fires 2306; timber nomenclature **1140**
Indonesia: exotics 241–2; forest history 1691; lac cultivation **1527**; match manufacture **461**; silviculture 220; timber nomenclature **1142**; tree spp. 992, 1795, 2836
Iowa: vegetation 2761
Iran *see* Persia
Iraq: forests 41, 2598
Ireland: land use 3564
Israel: afforestation 2930, pp. 134–5; climate and vegetation 160–1; forest spp. 987; forests 2598
Italy: afforestation 1103, 1955–6; classification of vegetation 1801; forest research 2568; forestry journals 9–10; forests 912, 2596; nomenclature of trees 897–8; Poplar growing 1886; resin tapping **653**, **2244**; shelterbelts 1985
Ivory Coast: vegetation studies 2749

JAPAN: soil survey 936; timber-lines 1807
Java: forestry research 2573; nomenclature of trees 899
Jugoslavia: afforestation 2912; exotics 2834; flora 1806, 2715–9, 2746–7; forest fires 2304–5; forest law 2548; forest policy 3542; forest research 1681; forest soil

types 1805; forest statistics 2591; forests 307, 1694; land use p. 400

KASHMIR: palaeoecology 910; Wattle plantations p. 256
Kenya: forest policy 2538, 5423; forests 2754; statistical section of Forest Department 852; timbers **1141**
Korea: forests and forestry 1710

LABRADOR: vegetation 1003
Lake States: manual of afforestation 2931
Latvia: exotics 2832
Lebanon: forest spp. 988
Levant: woody vegetation 1810
Liberia: forests 918

MACEDONIA: resin tapping **650**
Madagascar: forests 1914; Wattle plantations **3265**
Malaya: annual report 1669; exotics 1050; forest history 909; game department 1651; test methods **1130**; timbers **1135**; virgin-forest reserves 1649
Martinique: flora 149; forest resources 46
Massachusetts: bibliography of vegetation 150
Mauritius: insect fauna 212
Mediterranean basin: climate 920
Mexico: flora 1010, 1015, 2773–4; forests and forestry 45, 2601; national parks 1650; oils **1511**; vegetation 1004, 1813, 2756
Michigan: vegetation 2762
Middle East: insect pests 2379
Minnesota: vegetation 2759
Missouri: forest resources and industries 919
Morocco, French: agricultural research 1682; Eucalypt plantations 238, **636**; forests 1714; soil conservation 81; Wattle plantations **3265**
Morocco, Spanish: forests 1715
Mozambique: vegetation 43, 144
Mysore: forests 999

NETHERLANDS: afforestation 2928; forestry research 19, 906; forests and forestry 39, 914; insect pests 746, 1588, 3424–5; Poplar growing 228; shelterbelts 2946; statistics 2590
New Brunswick: forest fires 1545
New Hebrides: vegetation 176
New Jersey: vegetation 2758–9
New Mexico: tree spp. 2726
New South Wales: flora 151; insect pests 1589; vegetation 177
New York: hardwood plantations 277; wood-using industries **1238**
New Zealand: choice of spp. 1110; forest taxation 3562; integrated forest industries **442**; labour supply 865; shelterbelts 1122–3
Newfoundland: fire protection 1548
Nigeria: forest history 2577; nature reserve 2543; regulation of shifting cultivation 3566; sawmill p. 135; timber inspection p. 135
North Africa: forests and forestry 915, 1874; suitable exotic spp. 238
North Borneo: forest revenue p. 400
Norway: forest history 23; forest products research **1128**; forest taxation 3562; forestry 1672; forestry societies 1672; working conditions in Forest Service 3540
Nyasaland: exotics 2835; mechanized logging p. 400; Wattle growing **635**

OHIO: forests 170
Ontario: forest history 1690
Oregon: palaeoecology 911; timbers **341**
Orissa: forests and forestry 2599

PANAMA: flora 1794
Persia: forests 40
Philippines: forest policy 1675; forestry society 1674; land use 2554
Poland: ecology 156; exotics 2830; forest history 2575; insect fauna 207; production of seed and planting stock 2879
Portugal: insect pests 1587; wood-rotting fungi 3371
Puerto Rico: choice of species 2874; forest history 1655; forestry research 1659; insecticidal plant substances **3288**

QUEBEC: biogeographical service 1670; fire protection **547**, 2303; flora 167, 1002, 2712; forest history 27; forest policy 869; forests 1716
Queensland: medicinal and poisonous plants **2234**

SARDINIA: Eucalypts in 316
Scandinavia: forests 36
Scotland: utilization of thinnings **3109**
Siam: lac production p. 400; timber nomenclature **1139**
Sierra Leone: forest industries **3110**
Singapore: annual report 11
Slovenia: resin-tapping **2245–6**
South Africa: forest products research **333–4**; hydrological research 1684; scientific research 1683
South America: flora 2782
South Australia: ecology 1821
Southern Rhodesia: exotics 1881; flora 2779
Spain: afforestation 1954; forests 1884–5
Sudan: flora 1791–2; forest policy 868; soil erosion 80
Surinam *see* Dutch Guiana
Sweden: forest insects 3423; forest laws 3555; forest policy 3563; forest soils 1726; forest statistics 29, 1696–7, 2589; forest taxation 3562, p. 558; forests and forestry 37; timber industry 12, **2268**
Switzerland: avalanche damage p. 558; choice of spp. 2870–2; forest history 26, 2576; forest law 3556; forest statistics 30; vegetation studies 2742; vegetation types 1802–3, 2743–4
Syria: forests 2598

TAHITI: vegetation 178
Tanganyika: Wattle growing **635**
Tasmania: climate, vegetation, etc. 1883
Tennessee: flora 168–9
Trieste: Forest Research Station 18
Tunisia: forests 42, 916; soil conservation 79
Turkey: Eucalypt growing 236–7; forest insects 2380; forest policy pp. 256–7; forests 1712, 2598; handicrafts **2105**; improvement of wild Olives 1039; Poplar growing 1888; regeneration and afforestation 1916; wood utilization **3108**

UGANDA: export control 2269–70; forest history 2578; regeneration and afforestation 262
United Kingdom: afforestation of waste land 297, 1951; forest taxation 3562; forestry and forest products research 15, 903; forestry education 1678; forestry societies 1671; forests 907, 1703–5; Imperial Forestry Institute 2567; increment and broad-leaved trees 2507; insects 1855, 1863; national forests 872, 1646–7, 3546–7; research 1994–5
Uruguay: afforestation 2927
U.S.A.: climate and vegetation 2757; conservation of natural resources 3567; development of diseases 3372; employment and unemployment in forestry 863; forest ownership 886–8; forest products research **1129**, **3107**; forest statistics 2593–5; forest trees 147, 222; forests and forestry 44; imported timbers **2271**; tree breeding 2680–1
U.S.S.R.: ecological studies 158; exotics 2831–3; forest types 1804, pp. 257–8; forestry and utilization 913; match industry p. 401; natural regions 2738; shelterbelt scheme 318–23, 1119–21, 1986–9, 2950–6, p. 136; vegetation 159

VENEZUELA: consumption of wood and charcoal **2272**

WEST AFRICA: forests 2751–3; timbers **338**
West Virginia: vegetation types 1814
Wisconsin: choice of spp. 2875; vegetation types 1815–6